


Re: Call w/ Senator McCaskill 
Denis Borum to: Karl Brooks
Cc: Julia Cacho

01/24/2013 05:43 PM

Thank you. I'm checking with others and will hopefully know tomorrow. Have a good evening.

Karl Brooks 930-11a, after 330p CST. I'm in car: use b/b. 01/24/2013 06:28 PM EST

From: Karl Brooks
To: Denis Borum
Cc: Julia Cacho
Date: 01/24/2013 06:28 PM EST
Subject: Re: Call w/ Senator McCaskill

930-11a, after 330p CST. I'm in car: use b/b.

Denis Borum Hi, Karl - Following-up on this. What time win... 01/24/2013 04:20 PM MST

From: Denis Borum
To: Karl Brooks
Cc:
Date: 01/24/2013 04:20 PM MST
Subject: Fw: Call w/ Senator McCaskill

Hi, Karl -

Following-up on this. What time windows will work for you next Monday? Thank you

Denis

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----- Forwarded by Denis Borum/DC/USEPA/US on 01/24/2013 06:19 PM -----

From: Arvin Ganesan/DC/USEPA/US
To: "Karl Brooks" <brooks.karl@epa.gov>, "Ken Kopocis" <Kopocis.Ken@epamail.epa.gov>
Cc: "Denis Borum" <borum.denis@epa.gov>
Date: 01/24/2013 06:09 PM
Subject: Fw: Call w/ Senator McCaskill

Gents,

We need to follow up with McCaskill. I bought us til weds. Can we get a precall together on mon to land on messaging? Denis, can you coordinate the precall? Does the weds 1230 time work for the actual call?

From: "Blase, Jordan (McCaskill)" [Jordan_Blase@mccaskill.senate.gov]
Sent: 01/24/2013 11:06 PM GMT
To: Arvin Ganesan
Subject: Call w/ Senator McCaskill

Hi Arvin,

Does 12:30pm on Wednesday the 30th work on your end?

Thank you,

Jordan Blase
Scheduler & Executive Assistant
Senator Claire McCaskill
202-224-6154

CONNECT with CLAIRE at MCCASKILL.SENATE.GOV



Peters, Dana

From: Palmer, Downey (Blunt) <Downey_Palmer@blunt.senate.gov>
Sent: Thursday, October 03, 2013 11:05 AM
To: Brooks, Karl
Cc: Levine, Carolyn
Subject: FW: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]
Attachments: 92713responselettertousepa-gcptworkplan-final.pdf; LF-West Lake-RSG Gamma Cone Plan to EPA.pdf

Importance: High

Karl- who is the EPA contact on Westlake is during furlough?

From: esmith@moenviron.org [mailto:esmith@moenviron.org]
Sent: Thursday, October 03, 2013 11:55 AM
To: Palmer, Downey (Blunt)
Subject: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]
Importance: High

Downy,

See below and thanks for your time on the phone.

~Ed

Ed Smith
Safe Energy Director
Missouri Coalition for the Environment
(314) 705-4975
www.moenviron.org
@showmenocwip

----- Original Message -----

Subject: Gov't Shutdown, EPA, and West Lake Landfill
From: <esmith@moenviron.org>
Date: Thu, October 03, 2013 10:05 am
To: "Karl Brooks" <brooks.karl@epa.gov>, Tapia.Cecilia@epa.gov, "Debbie Kring" <kring.debbie@epa.gov>
Cc: "Joeana Middleton" <Joeana.Middleton@mccaskill.senate.gov>, "Lou Aboussie" <Lou.Aboussie@mail.house.gov>, "Kerry DeGregorio" <Kerry_DeGregorio@blunt.senate.gov>, "Bill Otto" <Bill.Otto@house.mo.gov>, "Brecht Mulvihill" <Brecht.Mulvihill@mail.house.gov>, "Kat Smith" <klogansmith@moenviron.org>, hnavarro@moenviron.org

Administrator Brooks,

I called Dan Gravatt's (EPA West Lake project manager) phone number and it appears he is on furlough until the government shutdown is over per his voice mail recording.

Will the Gamma Cone Penetration Test (GCPT) that Republic Services wants to conduct sometime between now and Oct. 10 be monitored by EPA Region 7 for quality assurance and protection of workers/fence-line communities?

Republic Services mentions that ground clearing will be needed to conduct this testing. Will there be equipment set up around the perimeter of the landfill to test for Alpha, Beta, and Gamma radioactivity in real time? If so, what is the protocol for alerting surrounding communities if there is a threat to public health? The reason we are concerned is because Republic Services calls for the use of a "**brush hog" to clear paths for the testing**, which EPA Region 7 has opposed in a comment letter on the plan.

Can Republic Services begin the GCPT work without EPA consent? Has the EPA given consent to start the testing?

Will the GCPT be in any way impacted by the shutdown as it relates to EPA oversight on the GCPT specifically or West Lake management in general?

Please do not consider these questions as part of the monthly exchange between MCE and EPA Region 7. These questions are particularly important considering the government shutdown and expected site study that will be conducted at West Lake, possibly during the government shutdown.

Who should people contact at EPA Region 7 with concerns if activity begins at the landfill and the government is still shutdown?

MCE was caught off-guard by the letter from Republic Services to EPA that was posted on the DNR website on Oct 2 saying it was going to begin work by Oct. 10 or sooner.

MCE would like clarity from the EPA about what is being done to address public safety during the GCPT work, who at EPA can be contacted during shutdown for concerns at the landfill if/when work starts, and what EPA is doing to monitor West Lake during the shutdown, **all before Republic Services is allowed to begin work at the landfill.**

An immediate response is much appreciated given the timely nature of our concerns.

Thanks,
Ed Smith

Ed Smith
Safe Energy Director
Missouri Coalition for the Environment
(314) 705-4975
www.moenviron.org
@showmenocwip



September 27, 2013

Ms. Cecilia Tapia
Director
Superfund Division
United States Environmental Protection Agency
Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

RE: North Quarry Contingency Plan — Part 2, Bridgeton Landfill, LLC, Permit Number 0118912, St. Louis County. Response to September 20, 2013 letter — EPA Approval with Conditions of the Gamma Cone Penetration Test Work Plan, Revision 1, September 10, 2013

Dear Ms. Tapia:

On behalf of our client, Bridgeton Landfill, LLC (hereinafter Bridgeton Landfill), Feezor Engineering, Inc. (FEI) hereby submits a revised version of the *Gamma Cone Penetration Test Work Plan (Revision 2)* incorporating the requested edits based upon the comments received in your September 20, 2013 letter.

The amended work plan was prepared under the direction of a Missouri Professional Engineer (Daniel Feezor, P.E., MO P.E. Number E-30292).

Consistent with your direction, the Project Team will commence on-site work, beginning with vegetation clearing operations, on or before October 10, 2013. We will provide notification to you one week prior to beginning site work.

Thank you again for your cooperation in this matter. We look forward to working with you.

September 27, 2013

If you have any questions, please feel free to contact me at (217) 483-3118 or Bridgeton Landfill's Environmental Manager Brian Power at (314) 744-8165.

Sincerely,

A handwritten signature in black ink, appearing to read "Dan R. Feezor". The signature is fluid and cursive, with the first name "Dan" and last name "Feezor" clearly legible.

Daniel R. Feezor, P.E.

Feezor Engineering, Inc.

dfeezor@feezorengineering.com

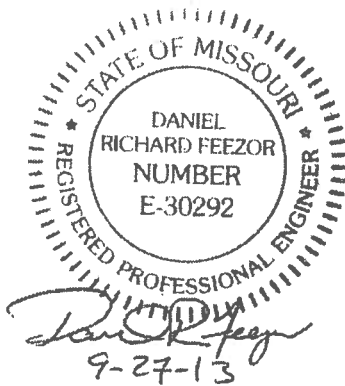
Attachment: Gamma Cone Penetration Test (GCPT) Work Plan, Revision 2, dated September 27, 2013



BRIDGETON LANDFILL—WEST LAKE LANDFILL

**GAMMA CONE PENETRATION TEST (GCPT)
WORK PLAN
REVISION 2**

BRIDGETON, ST. LOUIS COUNTY, MISSOURI



Prepared For:
Bridgeton Landfill, LLC
13570 St. Charles Rock Road
Bridgeton, MO 63044

September 27, 2013

Project No.: BT-012

Prepared By:

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GCPT Work Plan

Bridgeton Landfill, LLC

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1 INTRODUCTION

A detailed subsurface investigation is proposed in Area 1 of Operable Unit 1 of the West Lake Landfill Superfund Site in order to identify the optimum location and obtain geotechnical data for a possible contingent isolation barrier immediately to the north of the Bridgeton Landfill - North Quarry Area. The investigation is the first step in a process that may ultimately lead to the construction of the thermal barrier. Table 1 presents a preliminary plan and schedule for this process.

This document prescribes the location, technology, and methodology of this investigation. In particular, Cone Penetration Testing is selected for gathering detailed data to evaluate the southern extent of impacted material.

1.1 SITE CONDITIONS

In the 1970's West Lake Landfill received contaminated waste, including soil mixed with leached barium sulfate residues containing traces of uranium, thorium and their long-lived daughter products. The presence of the radiologically impacted material (RIM) resulted in the West Lake Landfill being designated as a Superfund site. For purposes of this Work Plan, RIM will refer to radiologically impacted material present at a level above that deemed appropriate for unrestricted use (5 pCi/g above background). The RIM is located in two areas at the site: Area 1, which is adjacent to the North Quarry Landfill and thus is pertinent to this investigation; and Area 2, which is located along the northern portion of the site. Area 2 is approximately 1,000 feet (at the closest) from the outer boundary of the North Quarry Area and is separated from it by a road and a closed demolition landfill (Figure 1). Collectively, these two areas have been designated as Operable Unit 1 for the Superfund investigation and remediation activities while the rest of the site was designated as Operable Unit 2.

The southern border of Area 1 is contiguous to the waste mass of Bridgeton Landfill, a quarry-fill landfill containing municipal waste. At the present time, Bridgeton Landfill is experiencing a Subsurface Smoldering Event (SSE) in its South Quarry Area. While the SSE is currently a significant distance from OU-1 Area 1, Bridgeton Landfill wishes to develop a response strategy to ensure that the SSE does not spread into the Area 1 RIM. One contingency under consideration is a subsurface thermal barrier located between Bridgeton Landfill's waste mass and the RIM located within West Lake OU-1 Area 1.

1.2 PROPOSED ISOLATION BARRIER

Bridgeton Landfill has evaluated the possibility of an excavated isolation barrier as a contingency means to prevent the SSE from advancing into the radiologically impacted material in West Lake OU-1 Area 1. Specifically, Bridgeton Landfill evaluated the excavation of waste to create an isolation barrier south of the southern limit of radiologically impacted material. Such an approach would also limit the volume of waste excavation, consistent with concerns raised

by the Lambert-St. Louis International Airport Authority. Finally the relative speed of construction, about three months, allows such a system to be implemented quickly. This isolation barrier would provide the physical barrier that Missouri Department of Natural Resources (MDNR) has requested.

In order to develop the design plans for the isolation barrier, additional subsurface data is needed between known extent of the Radiological Impacted Material (RIM) within West Lake OU-1 Area 1 and the Bridgeton Landfill - North Quarry Area. This work plan proposes advancing several Cone Penetration Tests (CPTs) to determine the characteristics of the subsurface materials within proposed alignments of the isolation barrier and in between the potential barrier alignments and the southern edge of the Area 1 fence. The CPT device proposed within the work plan will also be capable of measuring gamma counts which will provide a fairly high degree of certainty that the proposed isolation barrier can be constructed without encountering RIM.

Consistent with discussions with the Missouri Department of Natural Resources, this Gamma Cone Penetration Test (GCPT) investigation will be the first of two phased investigations to confirm the thermal barrier location. An additional Work Plan and Health and Safety Plan for a boring / coring technology will be submitted which will detail the locations and procedures of borings, core sample collection, and sampling for the eight radioisotopes, as well as other potential hazardous constituents of concern within the barrier alignment proposed following completion of the GCPT. However, the second phase of this investigation is outside the scope of this GCPT Work Plan and GCPT Health and Safety Plan

1.3 GOALS OF THE INVESTIGATION

Therefore, the primary goals of this investigation are:

- Determine the stratigraphy, nature, and geotechnical properties of subsurface materials for design purposes,
- Determine liquid levels,
- Determine if RIM exists within the proposed alignments, and
- Determine depth to native material.

The primary goals of the Phase 2 investigation will be:

- Obtain core samples for analytical testing, and
- Determine type of waste/subsurface material (i.e. rock, municipal solid waste, construction and demolition waste, etc.)

2 PREVIOUS INVESTIGATIONS

Previous investigations in the vicinity of the contingent thermal barrier did not contemplate construction of a physical structure; therefore, high-density geotechnical data does not exist. However, previous investigations have evaluated presence of radioactive materials at West Lake Landfill using downhole gamma radiation logging of soil borings, collection and analysis of surface and subsurface soil samples, and overland gamma surveys.

2.1 PRIOR INVESTIGATION METHODS

Downhole gamma radiation logging and overland gamma surveys were used as the primary detection methods for these investigations. In addition, soil samples were collected for analysis of uranium, radium, thorium isotopes and their decay products as well as for non-radiological constituents. Results of these investigations are presented in the Soil Boring/Surface Sample Investigation Report (McLaren/Hart, 1996) and the OU-1 Remedial Investigation Report (EMSI, 2000). Eight radionuclides were identified as contaminants of concern based on their long half-lives: U238, U234, Th230, Ra226 and Pb210 from the U238 series; U235 and Pa231 from the U235 series, as well as Th232. Isotopes from the Thorium-232 decay series are also present at levels above background, although to a lesser extent.

2.2 EXTENT OF AREA 1 CONTAMINATION

Downhole gamma logging by McLaren/Hart in Area 1 found elevated radiation levels varying from zero to sixteen feet below ground surface (bgs), while the thickness of the materials generally ranged from one to five feet in Area 1. In the northwest region of Area 1, elevated readings ranged from zero to six feet bgs, while to the southeast, elevated readings were found as deep as 15 feet bgs. The impacted area is illustrated in Figure 2.

An overland gamma survey also detected gamma radiation above background at the ground surface. Results of the overland gamma survey are also shown in Figure 2. Laboratory analyses of surface soil samples (the upper 6 inches) detected radionuclides at levels above 5 pCi/g above background at boring locations WL-106 and WL-114.

2.3 SFS ESTIMATE OF RIM BOUNDARY

The 2011 Supplemental Feasibility Study (SFS) included a detailed estimate of the extent of RIM. An outline of the known impacted material was created using the available boring data, as well as an outline of the known non-impacted area (see SFS Appendix B-1, Figures 3 and 4). Based on these boundary conditions, the estimated border of the RIM was interpolated between these two boundaries. These boundaries, the interpolated RIM limits, and borings used to estimate the limits are shown in Figure 2 of this Work Plan.

The SFS delineation of the extent of RIM was sufficient for purposes of developing and evaluating potential remedial alternatives for OU-1. However, construction of the proposed

thermal barrier requires a high degree of confidence that the alignment for proposed thermal barrier is located outside of the extent of RIM. Therefore, as part of geotechnical investigation of the proposed alignment, data will also be obtained to confirm that the selected alignment is not located in areas where RIM is present.

3 PROPOSED INVESTIGATION

3.1 OVERVIEW OF TECHNIQUE

The goals of the investigation are to gather the required geotechnical data for design and to provide confirmatory observations that material within the proposed excavation area and in between the potential barrier alignments and the southern edge of the Area 1 fence do not contain radiologically impacted material above the level appropriate for unrestricted use. The approximate limits of the materials containing materials higher than the standard for unrestricted use (5 pCi/g above background) were delineated in the 2011 Supplemental Feasibility Study. The general approach is to increase the number of observations in situ to verify that the selected alignment for the thermal barrier is located outside of areas of RIM. In addition, information is to be collected at each location regarding the stratigraphy, nature, and geotechnical properties of the materials as well as liquid levels, as relates to the design of the barrier system. Cone penetration with piezometer pressure readings (Piezo-Cone or CPT) along with a gamma radiation (G) sensor in a tool string has been selected as the most effective means of obtaining all the desired information within the area of interest.

The GCPT technique does not generate waste or bring physical material to the surface, does not generate dust or airborne emissions, and does not require introduction or collection of water or liquids (other than decontamination procedures). Therefore, it is a very suitable method for investigating areas that have the potential to contain radiological materials above background and landfill refuse.

Conceptual evaluation of barrier designs, reported in the March 29, 2013, letter to Mrs. Fitch of MDNR from Craig Almanza, identified potential alignments along which the barrier could be constructed. The conceptual evaluation also identified that the amount of material requiring excavation and the depth of such a barrier would be substantially lessened – along with all the negative impacts associated with waste excavation – if the barrier alignment were moved toward the north. This would allow avoiding the existing slopes of the North Quarry fill and would reduce the depth of excavation along the eastern portion of the alignment, where quarry activity followed by landfilling would require a much deeper excavation the farther south the barrier is located. The proposed investigation allows collection of information south of and, in some locations, up to the projected line of RIM material, in order to confirm the absence of RIM in the selected location and in between the potential barrier alignments and the southern edge of the Area 1 fence.

3.2 GAMMA CONE PENETRATION TESTING (GCPT)

GCPT (Piezo-Cone) soundings are a standard means of subsurface investigation and have been in widespread use since the 1980's. The general methodology and equipment used is described in ASTM D5778 and consists of an instrumented conical tip and friction sleeve of approximately

37.5 mm in diameter, fitted on the lower end of push rods that are forced at a constant rate into the subgrade. An electrical pressure transducer is included in the interval between the conical tip and the friction sleeve. A typical cone assembly is shown in Appendix A.

Tip force, sleeve force and pressure are all recorded as the push rods are advanced. Reading intervals are taken at intervals not exceeding 50 mm. The advance rate of the probe is approximately 2 cm/second, which is the ASTM Standard.

The type of soils, including waste materials, is inferred based on the analysis of combination of tip, sleeve and pore pressure while advancing (referred to as dynamic pore pressure). Work at other sites has demonstrated that interfaces between waste material and natural soil can be identified.

While the dynamic pore pressure is useful in the determination of soil types, static pore pressures can also be measured by performance of pore pressure equalization tests. This will provide the necessary information to determine liquid levels in the potential excavation area. These are performed by temporarily halting the progress of the cone and monitoring the pore pressure change with time. Given the typically sandy nature of the natural overburden it is anticipated that such tests will be of limited duration prior to attaining near steady state readings.

The gamma radiation logging will be performed using a proprietary device that is included in the equipment tool string behind the GCPT head. The device uses Cesium Iodide crystals. The device differs from a typical downhole logging gamma detector in that it is part of the push rod system and therefore has greater shielding from the thicker rod walls and is smaller in diameter for the same reason. However the device has been used successfully on other projects to detect the differences between clays and silts. A site specific empirical relationship will be developed using previously logged holes, as described in Section 3.2.1.2.

As stated previously, the purpose of the GCPT investigation is to identify subsurface radioactive material that may be present. The process is qualitative in nature and is not intended to be quantitative. Once the initial data is collected from the GCPT investigation (Phase 1) and a proposed location for the thermal barrier is determined, soil samples will be taken to perform a more complete analysis (Phase 2).

The soil core samples will be collected using sonic drilling, GeoProbe drilling, or other available and appropriate technologies. The samples will be collected using Auxier Procedure 3.3. The soil samples will be taken at various depth locations of the core boring sample. Biased samples will be taken at locations of radioactivity as identified by field radiation detection instruments. Other samples will also be taken where no radiation is detected by such radiation detection instruments. This procedure will be detailed in the Phase 2 Investigation Work Plan.

3.2.1 CPT Techniques

3.2.1.1 Cone Rig

A track mounted rig is proposed for the project. The rig will be able to supply 25 to 30 tons of down pressure. The track mounted rig exerts a limited ground pressure (less than 4 psi) and does not require hold-down anchors. This should avoid breaking the ground surface other than at the probe hole. The rig is self-contained, with all equipment readout, recording and on-board electricity within the equipment cab.

3.2.1.2 GCPT Correlation

3.2.1.2.1 CPT Device (Lithology Correlation)

These units will be correlated and tested in accordance with ASTM D5778. Correlation to in situ conditions for verification of the various zonation algorithms that may be applied will occur at soundings proximate to WL-108, WL-111, and WL-119 as well as at the gamma sensor calibration holes, as described below. The GCPT device correlation will only be between waste and in-situ alluvium.

3.2.1.2.2 Gamma Sensor (Radiological Impacted Material Correlation)

The gamma sensor readings will be correlated to site conditions in two ways. Soundings near the locations listed above, which are well outside the estimated RIM limits, will be used to establish a range of counts that are typical of background. This initial background value will be used to determine what readings obtained in the sounding locations trigger decontamination procedures. The value may be modified as the work progresses in non-RIM soundings.

In addition, soundings will be performed at the PVC-28, PVC-36 and PVC-38 locations, where previous gamma logging measured levels above background. The resulting readings will be used to evaluate a relationship between previous counts and the GCPT unit. If the original casing can be found, attempts will be made to advance the GCPT head within the existing casing. Otherwise two soundings will be performed, located at a 2-foot offset from the hole to the north or south.

The use of boring holes PVC-28, PVC-36 and PVC-38 is to correlate the readings obtained by the GCPT device in borings known to have increased levels of radiation. This procedure will ensure that the device is operating as expected as the sensitivity to radiation is confirmed. As recommended by the USEPA, boring locations of low or intermediate gamma readings (PVC-28 and PVC-36) will be included to further define the relative sensitivity of the GCPT device.

A daily response check of the GCPT will be performed with a check source such as a container of potassium carbonate (K_2CO_3) (which contains the naturally occurring isotope potassium 40) or a button source. This response check will be performed at the beginning and end of each day.

The sensor correlation readings will be taken prior to performance of the other soundings.

3.3 INVESTIGATION PROCEDURES

3.3.1 Land Clearing

As depicted on Figure 3, there will be 69 GCPT locations, with the 10 additional sampling locations extending to the southern perimeter fence line, in addition to GCPT calibration locations. The existing conditions of Area 1 include woody overgrowth and trees. Paths will be developed to minimize the clearing, but to allow access to all the GCPT locations. In order to prevent any visible dust emissions, the field team will use vegetation shears on larger vegetation. For smaller brushy-type vegetation that can't be handled by tree shears, the team will utilize a brush hog or similar surface-level cutting tool but will incorporate wetting of the materials as needed to prevent dust. This should also minimize soil disturbance.

The path for the GCPT test locations will be determined by connecting nearby clearing paths which will originate from a cleared baseline (approximately following the N-1 Alignment). Paths connecting consecutive GCPT locations will start from this baseline, as depicted in Figure 3.

The paths will be guided by an onsite surveyor, and an onsite health physicist who will conduct an overland gamma scan. A Ludlum 2221 ratemeter/scaler mated to a Ludlum 44-20 3x3" NaI detector will be used to survey selected portions of ground surface within and around Area 1. This instrument will be coupled to a Trimble GPS and operated in the ratemeter mode. This mode will allow the gamma count rate from the instrument to be collected at one-second intervals and assigned to its specific measurement location (latitude and longitude).

The operator will hold the detector approximately 30 cm above the ground surface and advance across the areas of interest in a series of straight lines at a rate of approximately one meter per second. The separation distance between the lines will be approximately 1.5 meters. After the survey, the field data will be processed using a combination of industry-standard commercial computer applications. Because all data points will be tied to a spatial coordinate, a map of the data will identify areas of surface soil containing RIM. These areas can then be located in the field and avoided or covered.

If the overland gamma scan indicates a radiological level over background, the health physicist will notify the clearing crew that they could be in an area that has surface RIM, and to proceed in a manner that avoids ground disturbance. The path will be cleared of vegetation 10-20 feet in the general direction dictated by the onsite surveyor, then the cleared path and the path to be cleared (as much as practicable) will be scanned with the overland gamma scan, then the next section will be cleared. This procedure will be used in the same sequence until the desired test location has been reached. It is envisioned that paths to each test location will be approximately 10-15 feet wide, while a larger area (25-30 feet diameter) will be cleared at each test location.

As stated above, in order to prevent any visible dust emissions, the field team will use vegetation shears on larger vegetation. For smaller brushy-type vegetation that can't be

handled by tree shears, the team will utilize a brush hog or similar surface-level cutting tool but will incorporate wetting of the materials as needed to prevent dust. If larger tree diameters are encountered, an attempt will be made to alter the path around the tree. If it is impossible to avoid the large diameter tree, then a logger will be tasked to cut the tree at the surface. The tree will then be pushed to the side of the alignment by the skid steer and left in place.

Extra effort shall be given to find suitable paths that do not require grubbing, and the use of handheld equipment to clear/prune vegetation will be used where practicable.

3.3.2 Near-Surface Preparation

Once the path is cleared, a crew will deploy a minimum 10 ounce per square yard non-woven geotextile, and then approximately 6-8 inches of rock aggregate will be spread to advance gravel roads to each test location along the cleared alignments. This should greatly reduce the risk that soil contamination may be transmitted to the field crew, and minimize any rutting due to ingress and egress.

The area of investigation is known to contain small surficial layers of concrete and other inert rubble which in some locations may extend below the ground surface several feet. If necessary, a small trackhoe will be used to push rubble aside and, if necessary, remove near surface material below grade. Such an excavation, if required, will be kept to minimum practical dimensions and the resulting void will be backfilled with clean soil material which is tracked or pounded in place to create a stable surface for the geotextile and gravel pad described above. The rubble that is removed to the side of the CPT investigation area will be radiologically screened as described in Appendix C and allowed to remain in place if screening is negative.

Any removal of any surficial concrete or other rubble will be kept to an absolute minimum. Attempts will be made to disturb the soil as little as possible, if at all. A radiation survey will be performed of any such materials moved and records will be maintained.

3.3.3 Surveying

Once the final location for the GCPT has been cleared and the gravel access corridor has been constructed, the surveyor will affix a stake at the proposed location. The stake will be marked with a high visibility flag and the GCPT number, the Northing, Easting, and final ground surface elevation will be documented with permanent marker onto the stake. This information will also be recorded by the surveyor onto his/her field book or data logger.

3.3.4 GCPT Logging

Once the locations have been staked and checked, the GCPT rig will be deployed. It is envisioned that the GCPT rig will proceed to the first location, WL-111. This was a previously logged boring from the 1996 McLaren/Hart field investigation that included both lithology and downhole gamma logging. The rig operator will check the location and elevation information that is marked on the survey lathe to the information within the operator's notes. If there is any deviation, the operator will notify the Project Manager, who will determine if additional

surveying is needed. If there is no conflict in the data, the GCPT rig operator will conduct the GCPT and log the data. The GCPT operator and the Project Manager will then determine if the gamma logging confirmed the absence of RIM material, consistent with the 1996 gamma log. In addition, the Project Manager will compare lithology from the new GCPT log and the 1996 McLaren/Hart boring for general consistency.

Please note that it is expected that WL-111 will contain no RIM due to the 1996 McLaren/Hart information.

This same procedure will be repeated at the WL-108 and WL-119 boring locations for consistency review with the previous work.

The GCPT rig will then be deployed to PVC-28, PVC-36 and PVC-38, where RIM is expected to be found. After the GCPT log is obtained from this location, the data will be downloaded and analyzed to determine if the GCPT was able to detect elevated gamma counts as the 1996 McLaren/Hart gamma log did, as shown on the original NGamma log included in Appendix B. The GCPT operator will then move the rig to the decontamination area for proper decontamination and radiological survey in accordance with this Work Plan. Based on the data collected, the Project Manager will determine whether readings at additional locations are needed.

Once it has been determined that the procedure is adequate for the determination of RIM and non-RIM materials, the GCPT rig will advance to each of the GCPT boring locations. After each GCPT test, the rig will be scanned and decontaminated before proceeding to the next test location. Each sounding hole will be filled with short hydrated lifts of bentonite pellets from the surface.

3.4 CONTAMINATION SURVEYS AND DECONTAMINATION PROCEDURES

The potential to spread contamination will be mitigated by checking equipment and personnel as they leave Permitted Areas. If contamination is identified, the contamination will be removed and the equipment rechecked. This is an iterative process that will continue until equipment and personnel meet exit criteria.

3.4.1 Radiological Surveys

Surveys will be used to monitor and control exposures and the potential spread of contamination. The following subsections describe the surveys to be used and their requirements.

3.4.1.1 Baseline Entry Survey – Equipment

All vehicles and large equipment entering Area 1 will be surveyed by the RCT (Radiation Control Technician) for fixed alpha and beta contamination before its initial entrance into Area 1. The survey will be conducted using a Ludlum Model 12 coupled to a Model 43-5 (or equivalent), and a Ludlum Model 12 coupled to a Model 44-9 (or equivalent) as described in A&A Procedure 2.7.

3.4.1.2 Permitted Area Exit Survey - Personnel

Personnel exiting a Permitted Area will have their shoes and clothing scanned upon leaving the area, as described in A&A Procedure 2.7. Records will include the name of the individual, the results of the exit survey, the location, and the times they entered and left the area on the a standard form such as A&A Form 11, Personnel Monitoring Form or a log sheet attached to a copy of the Radiation Work Permit. A reading of two (2) times the ambient background level will require decontamination before leaving the area.

3.4.1.3 Permitted Area Exit Survey - Equipment

Heavy equipment working inside a Permitted Area will be surveyed by the RCT before leaving the area. All surfaces in contact with soil will be scanned for beta surface activity with a Ludlum Model 12 coupled to a Model 44-9 (or equivalent) as described in A&A Procedure 2.7. A reading of two (2) times the ambient background level will require the equipment be decontaminated and resurveyed before it leaves the Permitted Area.

Sections of the downhole probe body will be sampled with a swipe between sampling locations detect any removable activity on the surface of the tool string. The swipe samples will be screened in the field with a Ludlum Model 12 coupled to a Model 43-5 alpha detector. A final measurement of alpha and beta activity on the smear will be performed using a Ludlum 2929 coupled to a Ludlum 43-10-1 or a low-background alpha/beta counter such as a XLB-5.

3.4.1.4 Final Release Survey - Equipment

Equipment working inside a Permitted Area and equipment that might inadvertently contact contaminated soil outside a cleared easement will be surveyed by the RCT before leaving Area 1. All surfaces in contact with soil will be scanned for alpha and beta contamination with a Ludlum Model 12 coupled to a Model 44-9 (or equivalent), and a Ludlum Model 12 coupled to a Model 44-5 (or equivalent) as described in A&A Procedure 2.7.

Removable contamination will be sampled by swiping 100 cm² areas on parts of the equipment that were in contact with soil surfaces as described in Procedure 3.6. These smear samples will be counted with a Ludlum Model 29 coupled to a Ludlum 2929 coupled to a 43-10-1.

If contamination is found, the vehicle will be decontaminated until it meets final release standards listed in Table 2. The equipment identification and the final results will be recorded on the appropriate equipment release form from the A&A Procedures Manual and the equipment will be unconditionally released from Area 1.

Table 2 Final Release Survey Limits for Equipment

Parameter	Limit	Meter Reading^a
Fixed Alpha	100 dpm/100cm ² , average	20 cpm Mo 12/Mo 43-5
(Ra-226 & Th-230)	300 dpm/100cm ² , maximum	60 cpm Mo 12/Mo 43-5
Fixed Beta	5,000 dpm/100cm ² , average	750 cpm Mo 12/Mo 44-9
(U _{nat} & assoc. decay products)	15,000 dpm/100cm ² , maximum	2250 cpm Mo 12/Mo 44-9
Removable Alpha	20 dpm/100cm ² , average	Na
Removable Beta	1,000 dpm/100cm ² , average	Na

^a Nominal values. Meter efficiencies will be reevaluated at the site.

3.4.2 Equipment Decontamination

All equipment (including but not limited to the GCPT rig) will be surveyed in accordance with Section 3.4.1 of the Work Plan. If radioactive contamination is detected, the equipment will be decontaminated. A phased approach to decontamination will be employed to minimize the generation of solid waste and waste water.

3.4.2.1 Dry Decontamination

It is expected that any contamination will be associated with loose, removable dirt and mud that may attach to the equipment's surfaces during operations. If contamination is detected on equipment after operations are completed in a Permitted Area, an attempt will be made to decontaminate the equipment before moving to the next Permitted Area. Visual patches of dirt and mud will be removed from the contaminated surfaces of the equipment using damp wipes, brushes, and scrapers. Used decontamination supplies will be placed in marked containers or bags. The remainder of material removed during dry decontamination will be placed in a separate container with hard plastic or metal sides and staged for retrieval and sampling. Any solid radioactive waste generated will be packaged and characterized for handling as described in Section 3.4.2.4. The equipment will be resurveyed and allowed to leave the next Permitted Area if it meets the requirements described in Section 3.4.1.3.

3.4.2.2 GCPT Rig Decontamination

The CPT rig is equipped with a rod cleaning system. Tool strings (push rod probes) will be washed/wiped as they are removed from the ground to remove visible dirt and mud.

The washing system passes the rods, upon extraction, through a chamber with a wiper at the top and bottom. Heated wash water can be introduced as needed into the chamber to clean the rods more thoroughly. Upon completion of the soundings the washing chamber will be washed with Alconox and triple rinsed, and the wipers will be replaced. The wash water generated by these operations will be piped to the exterior of the rig, where it will be then collected outside the CPT rig and retained in a portable tank.

3.4.2.3 Wet Decontamination of Equipment

If dry decontamination is not sufficient to meet release levels, the equipment will be moved to the radiological decontamination pad. Contaminated surfaces will be scrubbed with brushes and soapy water until they are visually clean. The equipment will be surveyed again for both alpha and beta surface activity. If fixed or removable activity exceeding the release limits is found, the contaminated surface will be decontaminated using more aggressive methods such as pressure washing or abrasive blasting until the release criteria are met.

3.4.2.4 Waste/Water Management

Water used to decontaminate equipment will be placed in marked holding tanks and/or drums, sampled, and packaged and shipped to a licensed, managed disposal site.

Any solid radioactive waste generated will be packaged and characterized for shipping. This material will be shipped to managed disposal/treatment facilities that are permitted to receive the waste.

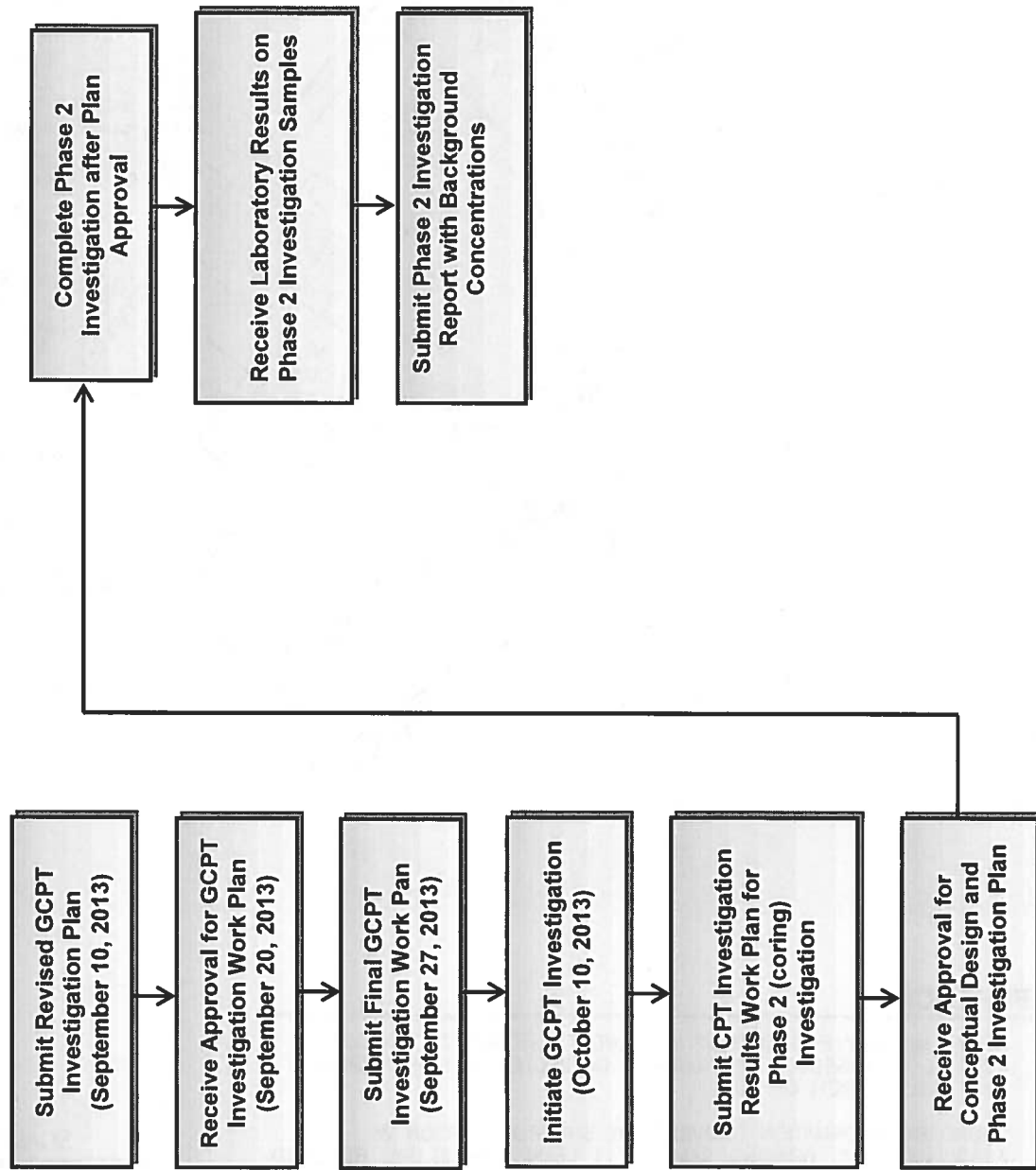
3.4.2.5 Final Housekeeping Wash-down

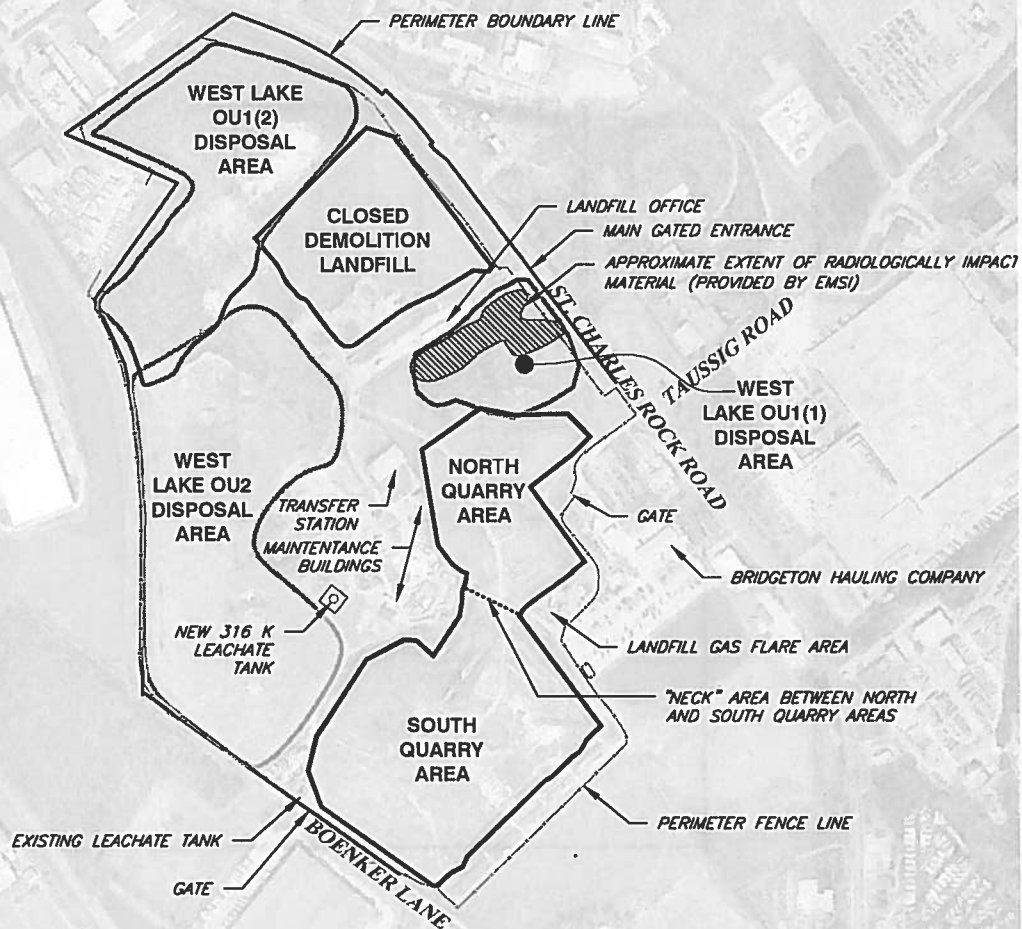
Because of the very high visibility of this sampling event, any equipment released from Area 1 will be washed with soap and water to remove visible dirt from its surfaces prior to its removal from the project. This final housekeeping can be performed in an uncontrolled area and any water generated from this final cleaning of previously released equipment will be considered unimpacted.

3.4.3 Decontamination Pads

Two separate decontamination pads will be constructed directly from the gravel clearing pads. A radiological decontamination pad will be constructed near PVC-38. This pad will be used to decontaminate equipment failing the free-release radiological requirements. A second pad will be provided for general cleaning of equipment that has not been exposed to RIM materials. This pad will be placed close to the fence near the entrance road to the OU-1 Area 1. These pads will be constructed using a geotextile and 8 inches of gravel.

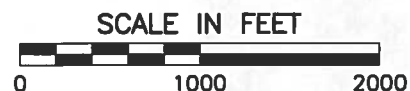
TABLE 1
PLAN AND SCHEDULE FOR CONTINGENT ISOLATION BARRIER
INVESTIGATION





REFERENCE

1. AERIAL IMAGERY PROVIDED BY EAST WEST GATEWAY COORDINATING COUNCIL OF MISSOURI AND ILLINOIS, COLLECTED IN LATE FEBRUARY AND EARLY MARCH OF 2012.
2. BOUNDARY INFORMATION PROVIDED BY SHERBUT-CARSON & ASSOCIATES, P.C. DRAWING NAME-1111 LEASE EXHIBIT.DWG RECEIVED ON 03/04/2013



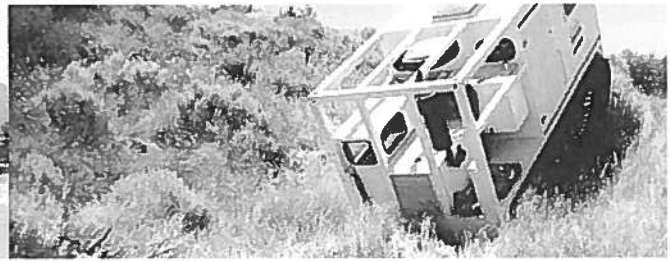
BRIDGETON LANDFILL, LLC
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI

FACILITY MAP

DRAWN BY:	MSP	CHECKED BY:	MRB	APPROVED BY:	DRAFT	FIGURE NO.:
DATE:	JUN. 2013	DWG SCALE:	1"=1000'	PROJECT NO:	131-178.0001	1

APPENDIX A

GAMMA CONE PENETRATION TEST (GCPT) VENDOR INFORMATION



[Home](#) > [Site Investigation Equipment](#) > [CPT Tracks](#)

[CPT Trucks](#)

[CPT Tracks](#)

[Portable / Limited Access](#)

[Heliportable CPT and
Drilling Units](#)

[Amphibious](#)

[Drilling](#)

[Marine](#)

CPT Tracks

Features

- 25-30 Ton Thrust Capacity
- 4 Point Leveling Jacks
- Low Ground Pressure
- Stainless Steel Laboratory Interior
- Onboard Air & 110 v Electricity
- Built In Automatic Seismic Beam
- Positive Air Shut Off
- M2.5 Drill for CPT Drillouts

Services

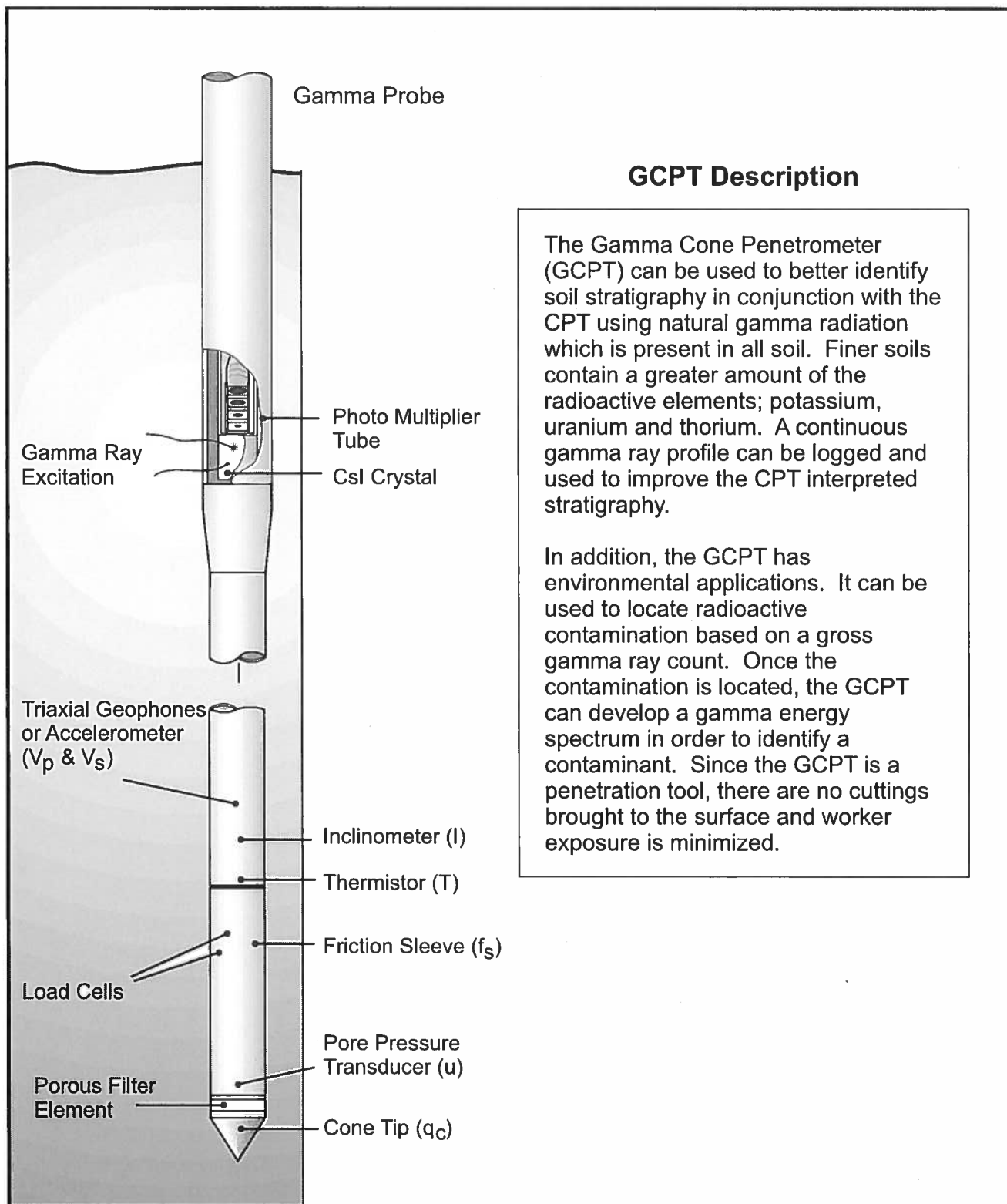
- CPT Testing
- Seismic CPT Testing
- Push-in Electronic Piezometers & Dataloggers
- RCPT, UVIF-CPT, Gamma CPT
- Direct Push Soil & Water Sampling
- Direct Push Well Installations
- MIP(Membrane Interface probe) Testing
- Shallow Auger Drilling
- SDMT Testing

Advantages

- 30 ton Thrust Capacity
- Unprecedented Penetration Capabilities
- Clean, Dry & Warm Working Space
- No Anchoring Required
- Excellent Production Rates
- CPT Engineer & Technician Teams
- Environmental & Geotechnical Services
- 3.8 PSI Ground Pressure



Gamma Cone Penetrometer (GCPT)



GCPT Description


The Gamma Cone Penetrometer (GCPT) can be used to better identify soil stratigraphy in conjunction with the CPT using natural gamma radiation which is present in all soil. Finer soils contain a greater amount of the radioactive elements; potassium, uranium and thorium. A continuous gamma ray profile can be logged and used to improve the CPT interpreted stratigraphy.

In addition, the GCPT has environmental applications. It can be used to locate radioactive contamination based on a gross gamma ray count. Once the contamination is located, the GCPT can develop a gamma energy spectrum in order to identify a contaminant. Since the GCPT is a penetration tool, there are no cuttings brought to the surface and worker exposure is minimized.

APPENDIX B


**SOIL BORINGS AND DOWNHOLE GAMMA LOGS
WL-108, WL-111, WL-119**

DOWNHOLE GAMMA LOG PVC-28, PVC-36 AND PVC-38

Soil Boring Log		 McLaren Hart	
Boring No. WL-108		Project No./Name 07.0803035.003.002	Page: 1 of 1
Start/Finish Date 9/5/95		Site Name and Location West Lake Landfill; Bridgeton, Missouri	
Drilling Contractor Drilling Service Company		Boring Location: Area 1 Ground Surface Elevation: 472.5	
Driller Bruce Murphy		Northing: 1069144.21 Easting: 516379.68	
Drilling Equipment LDH-30T Drill Rig, Large Diameter Auger		McLaren/Hart Geologist/Office Tim Biggs / St. Louis	
Bit Size/Type 24" OD Solid Auger	Sample Method Grab from Auger	T.D. Borehole 22'	Well Installed? None Installed
Remarks:			
Depth (ft)	Sample ID #	Gelger Reading (mR/hr)	Description
5	WL-108 5'	Background (0.02-0.04)	0.0-22.0' <u>Landfill Debris</u> : trashy debris consisting of wood, plastic, paper, rubber, metal, and cardboard; soil consisting of olive brown to dark gray silt, and rock; dry to wet. @ 12' wet Boring abandoned @ 22.0'
10	None Taken	None Taken	
15	None Taken	None Taken	
20	None Taken	None Taken	
25	None Taken	None Taken	

Notes:

Radiological sample collected at 5 feet below ground surface.
 Non-radiological grab sample collected from perched water.
 Perched water encountered at 12 feet below ground surface.
 Groundwater not encountered during boring activities

Soil Boring Log		 McLaren Hart	
Boring No. WL-111		Project No./Name 07.0803035.003.002	Page: 1 of 1
Start/Finish Date 9/11/95		Site Name and Location West Lake Landfill; Bridgeton, Missouri	
Drilling Contractor Drilling Service Company		Boring Location: Ground Surface Elevation:	Area 1 474.5
Driller Bruce Murphy		Northing: Easting:	1069187.35 516583.61
Drilling Equipment LDH-80T Drill Rig, Large Diameter Auger		McLaren/Hart Geologist/Office Tim Biggs / St. Louis	
Bit Size/Type 24" OD Solid Auger	Sample Method Grab from Augers	T.D. Borehole 52'	Well Installed? None Installed
Remarks:			
Depth (ft)	Sample ID #	Geiger Reading (mR/hr)	Description
5	WL-111 5'	Background (0.02-0.04)	0.0-50.0' <u>Landfill Debris</u> : trashy debris consisting of wood, plastic, cloth, brick, rubber, paper, wire, glass, and metal; soil consisting of olive brown to gray silt, dark gray to grayish brown silty clay, and crushed rock; dry to wet.
10	WL-111 10'	Background (0.02-0.04)	
15	WL-111 15'	Background (0.02-0.04)	
20	WL-111 20'	Background (0.02-0.04)	
25	WL-111 25'	Background (0.02-0.04)	
30	WL-111 30'	Background (0.02-0.04)	
35	WL-111 35'	Background (0.02-0.04)	
40	WL-111 40'	Background (0.02-0.04)	
45	WL-111 45'	Background (0.02-0.04)	@ 45' wet
50	WL-111 50'	Background (0.02-0.04)	
55	WL-111 51'	Background (0.02-0.04)	50.0-52.0' <u>Native Alluvium</u> : dark gray, silty, very fine-grained sand; wet. Boring terminated @ 52.0'.


Notes:

Radiological samples collected at 5 and 51 feet below ground surface.

Non-radiological samples not collected during boring activities.

Perched water not encountered during boring activities.

Groundwater encountered at 45 feet below ground surface.

Soil Boring Log		 McLaren Hart	
Boring No. WL-119		Project No./Name 07.0803035.003.002	Page: 1 of 1
Start/Finish Date 9/29/95		Site Name and Location West Lake Landfill; Bridgeton, Missouri	
Drilling Contractor		Boring Location: Area 1	
Drilling Service Company		Ground Surface Elevation: 477.4	
Driller Bruce Murphy		Northing: 1069031.14	
		Easting: 516289.26	
Drilling Equipment LDH-80T Drill Rig, Large Diameter Auger		McLaren/Hart Geologist/Office Tim Biggs / St. Louis	
Bit Size/Type 24" OD Solid Auger	Sample Method Grab from Augers	T.D. Borehole 50'	Well Installed? None installed
Remarks:			
Depth (ft)	Sample ID #	Gelger Reading (mR/hr)	Description
5	WL-119 5'	Background (0.01-0.04)	0.0-44.0' <u>Landfill Debris</u> : trashy debris consisting of yard waste, insulation, wire, wood, plastic, shingles, cloth, carpet, paper, glass, and metal; soil consisting of light brown to dark gray, silty, plastic clay to sandy silt; dry to moist.
10	None Taken	Background (0.01-0.04)	
15	WL-119 15'	Background (0.01-0.04)	
20	None Taken	Background (0.01-0.04)	
25	WL-119 25'	Background (0.01-0.04)	
30	None Taken	Background (0.01-0.04)	
35	None Taken	Background (0.01-0.04)	
40	None Taken	Background (0.01-0.04)	44.0-50.0' <u>Native Alluvium</u> : dark gray, silty, fine to medium-grained sand; moist.
45	WL-119 45'	Background (0.01-0.04)	
50	WL-119 50'	Background (0.01-0.04)	
Boring terminated @ 50.0'			

Notes:

Radiological samples collected at 5 and 50 feet below ground surface; duplicate collected and analyzed for 50' sample.

Non-radiological samples collected at 50 feet below ground surface; priority pollutant and priority pollutant duplicate sample collected and analyzed.

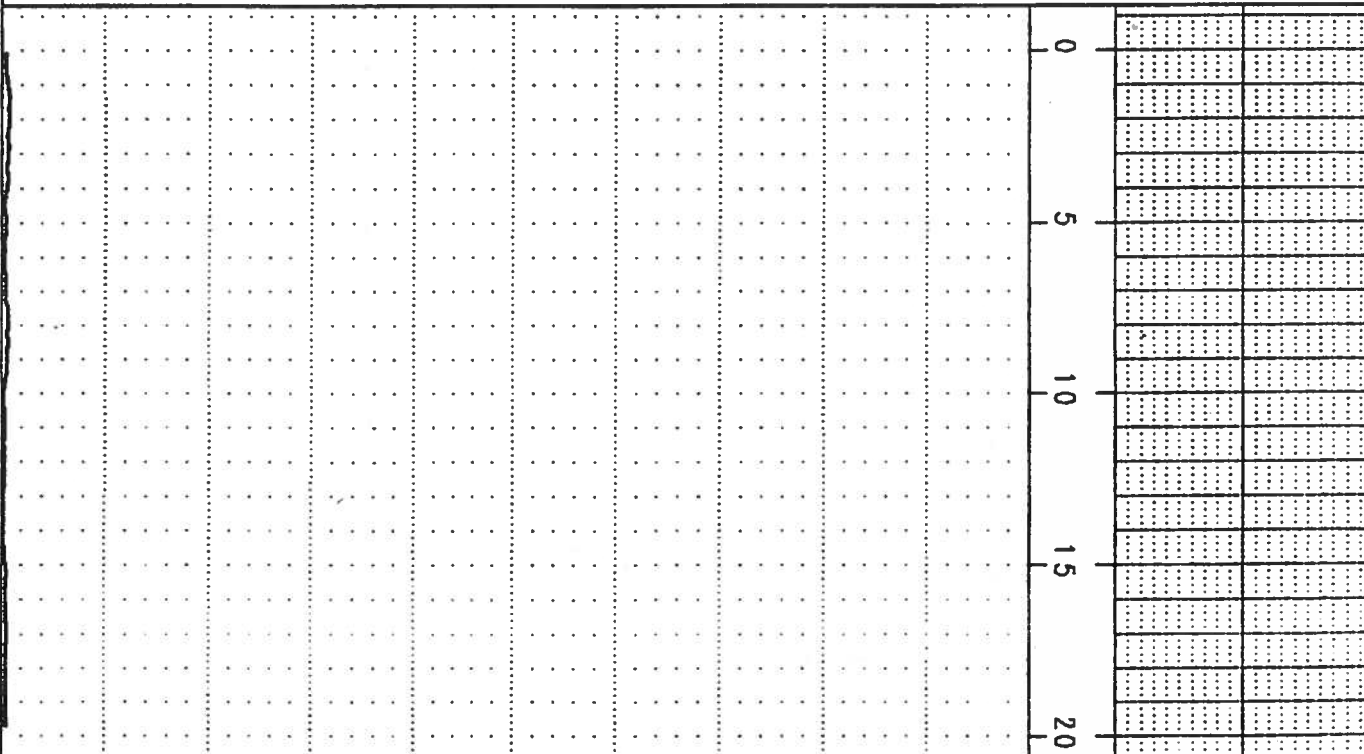
Perched water not encountered during boring activities.

Groundwater not encountered during boring activities.

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COLOG

← 0 NGamma CPM 600000 →



← 0 NGamma CPM 600000 →

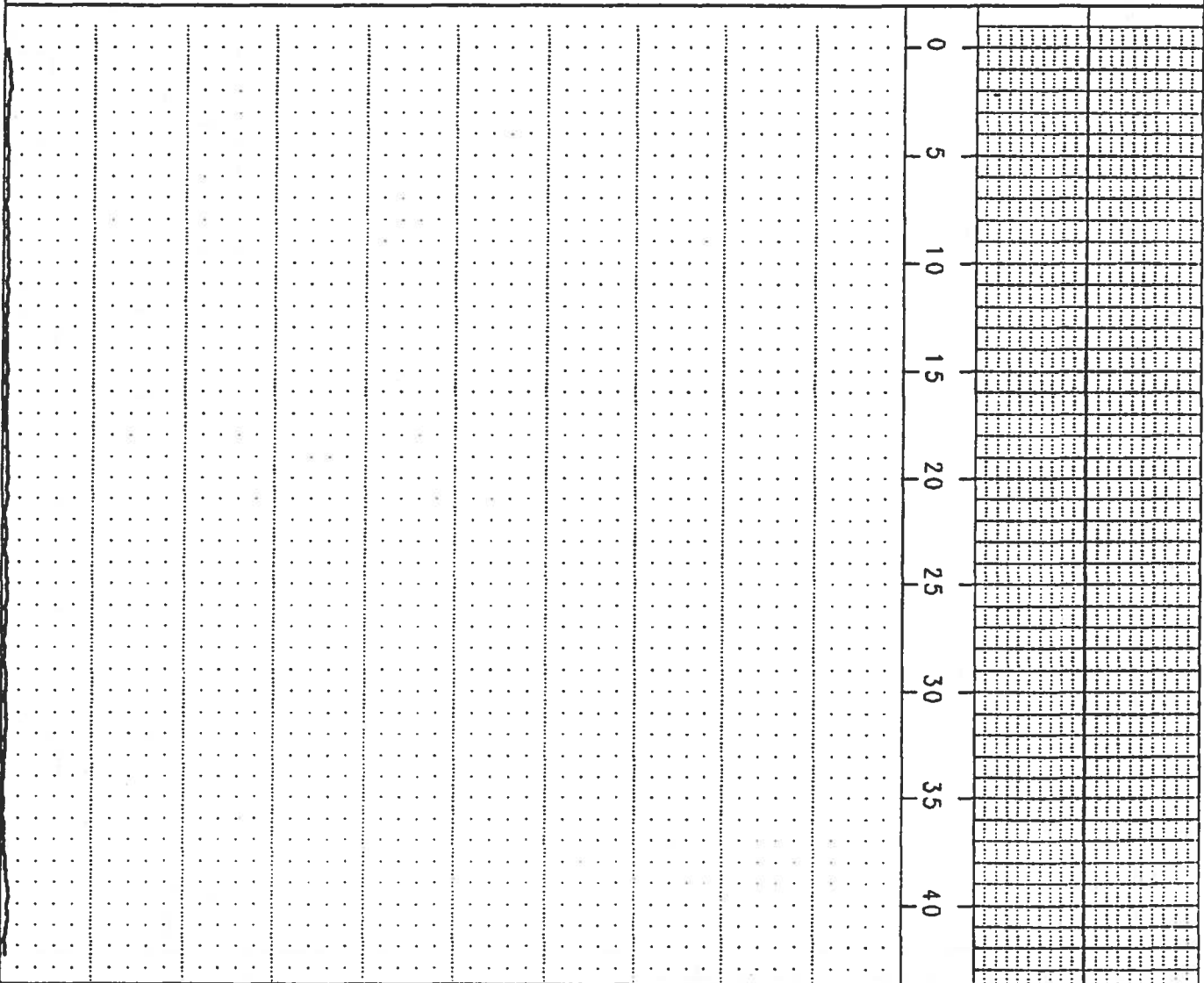
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COLOG

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COLOG

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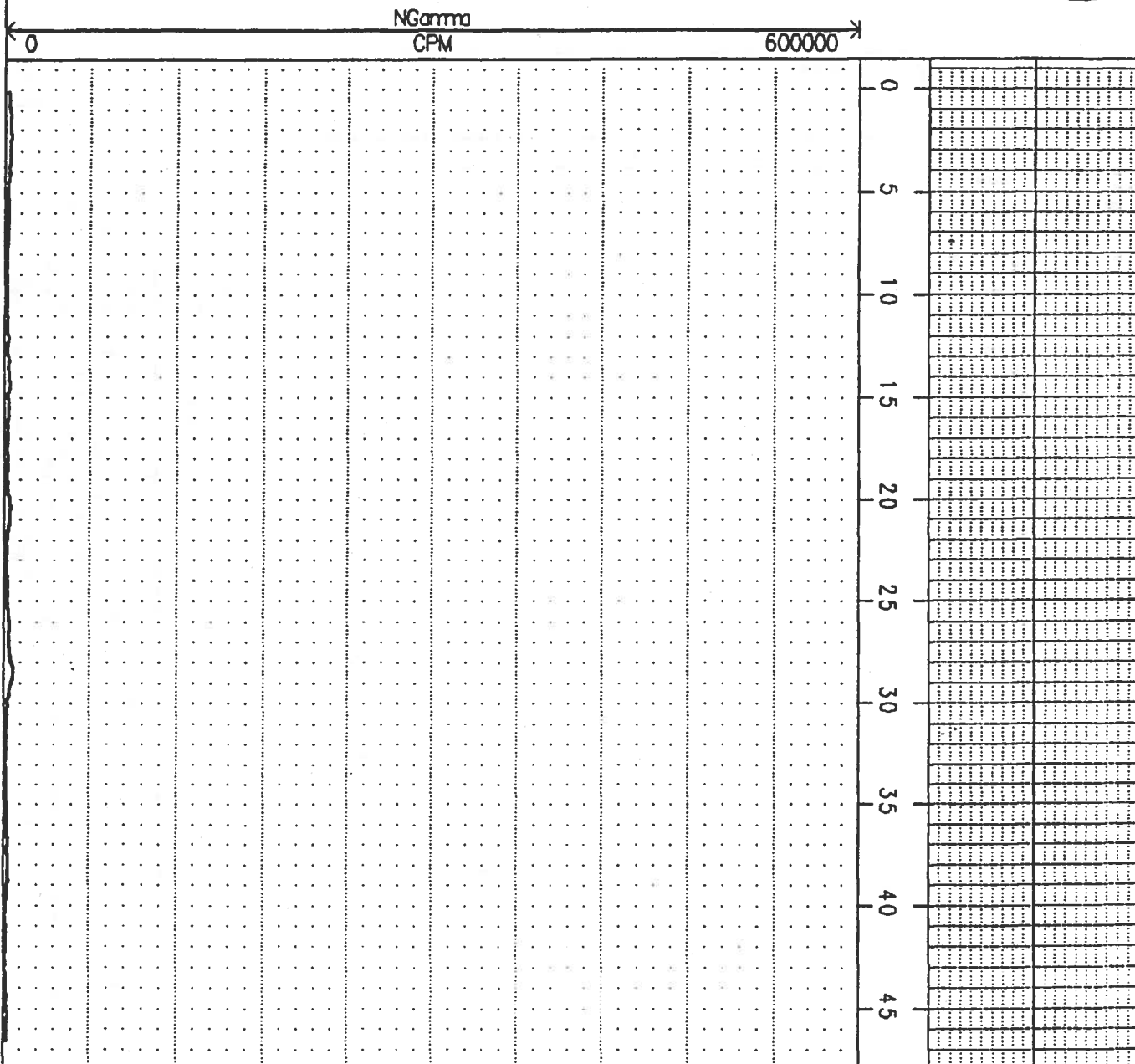
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NGamma CPM 600000

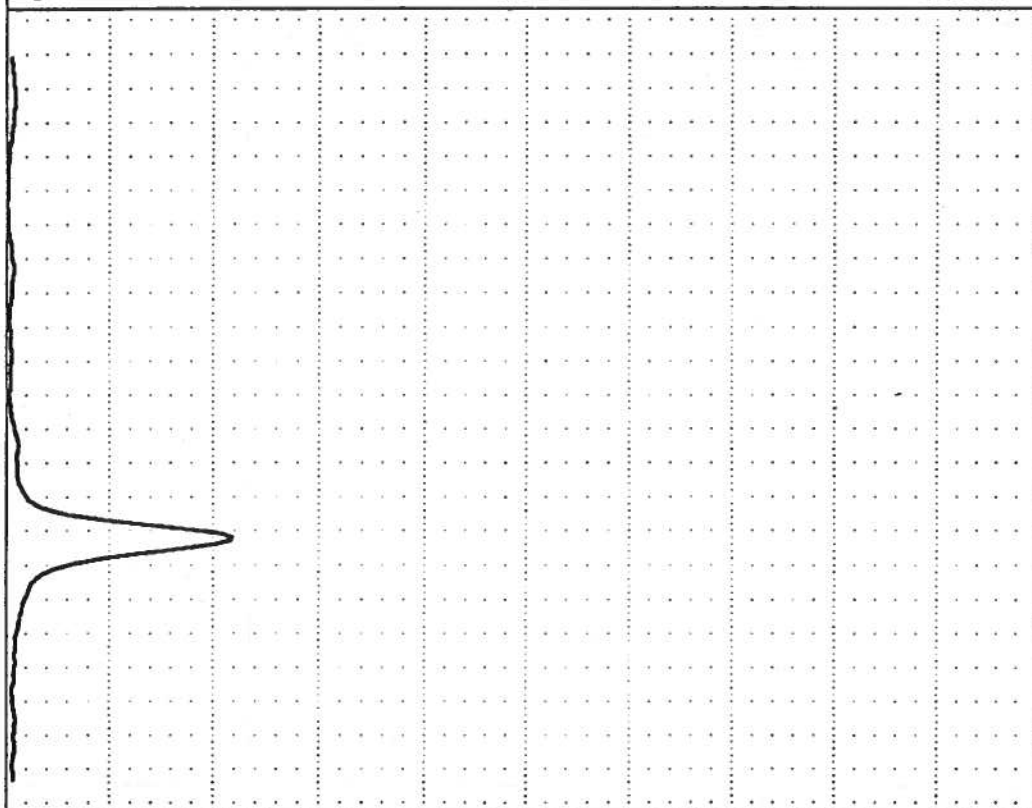
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COLOG

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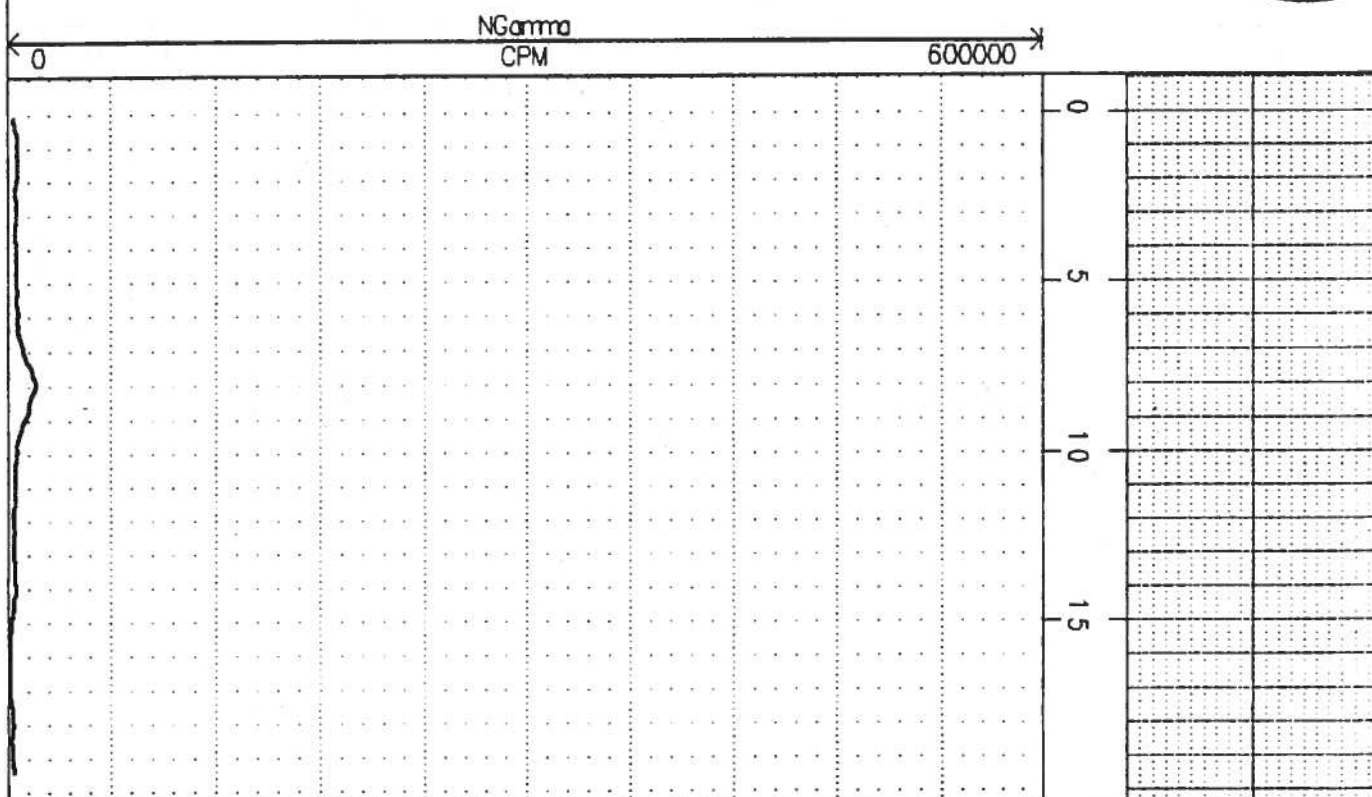
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COLOG

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COLOG



NGamma
CPM

600000

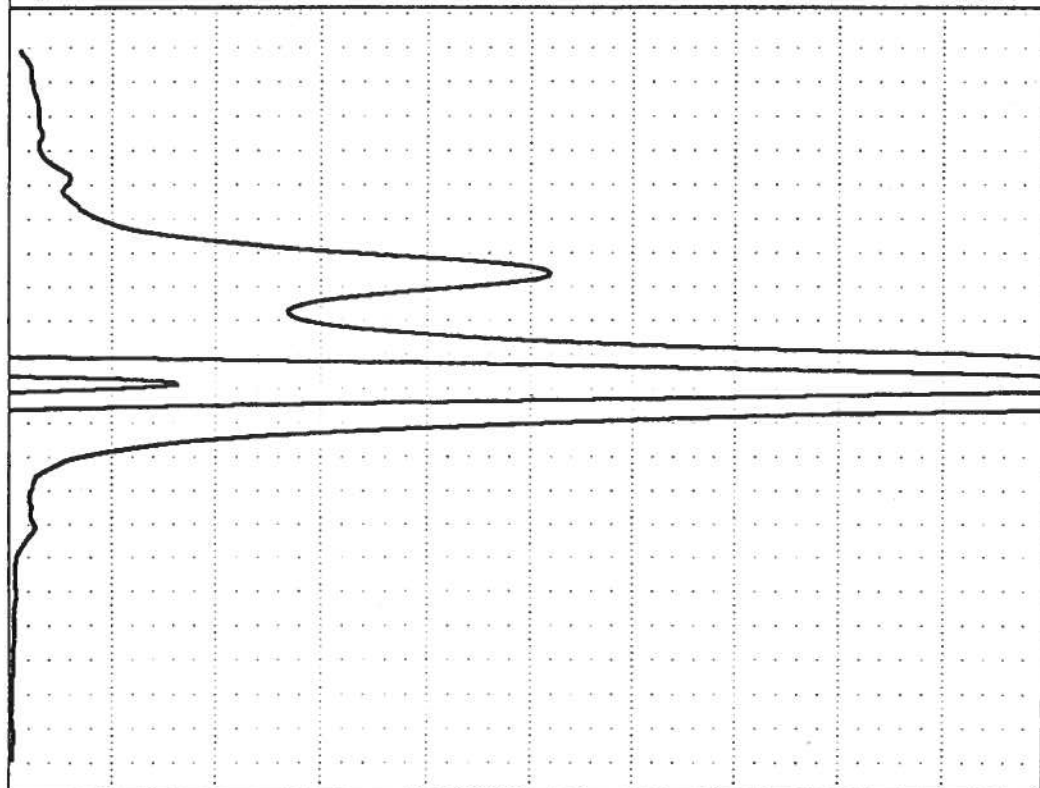
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COLOG

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COLOG

APPENDIX C

RADIOLOGICAL FRISKING PROCEDURES

PROCEDURE 2.7

MONITORING PERSONNEL AND EQUIPMENT FOR RADIOACTIVE CONTAMINATION

1.0 PURPOSE

- 1.1 To describe the general approach for monitoring personnel and equipment for radioactive contamination.

2.0 RESPONSIBILITIES

- 2.1 The Site Survey Manager is responsible for assuring that this procedure is implemented.
- 2.2 Survey team members are responsible for following this procedure.

3.0 PROCEDURE

- 3.1 Upon exiting potentially contaminated areas, monitoring of clothing and exposed skin surfaces will be performed. Equipment and materials will also be monitored and shown to be free of contamination before release for use without radiological restrictions or controls.
- 3.2 Equipment
- 3.2.1 Ratemeter-scaler: Model 3 or Model 2221, Ludlum Measurements, Inc.; or equivalent, equipped with audible speaker or headphones.
- 3.2.2 Detector: Selected detectors are indicated below. Equivalent detectors are also acceptable.

Activity	Detector Type	Model
Alpha	ZnS scintillator	Ludlum 43-1 or 43-5, Eberline AC3-7 or AC3-8
	Gas proportional	Ludlum 43-68, Ludlum 239-1
Beta	Gas proportional	Ludlum 43-68, Ludlum 239-1
	Geiger-Mueller	Ludlum 44-9, Eberline HP-260

3.2.3 Instrument cables

3.2.4 Check sources

3.2.5 Record Forms and/or field logbook

3.3 Quality Control Check

Assemble instrument, turn on, check battery, and adjust high voltage and threshold, if necessary. Check background and source responses following Procedure 2.1.

3.4 Surface Scanning

3.4.1 Headphones or other audible signal operating modes are used for scanning.

3.4.2 Set the instrument response for "FAST", response where possible.

3.4.3 Pass the detector slowly over the surface. The detector should be kept as close to the surface as conditions allow. The speed of detector movement will vary depending upon the radionuclide of concern and the experience of the surveyor. While scanning for alpha or beta activity, the detector is typically moved about one detector width per second.

3.4.3 Note increases in count rate as indicated by the audible meter output. Identifiable increases in the audible response suggest possible contamination and should be resurveyed at a slower rate to confirm findings.

3.5 Personnel Monitoring

3.5.1 When monitoring for skin or clothing contamination, give particular attention to the hands, shoes, pant and shirt cuffs, knees, and other surfaces which have a high likelihood of contamination.

3.5.2 If there is detectable contamination, it should be removed as directed by the Health and Safety Committee (HSC) Chairperson. Decontamination guidance will be provided in the Survey Work Plan. The Site Safety Officer will implement decontamination or other contamination control actions at the project site.

3.6 Equipment Monitoring

- 3.6.1 For equipment surveys, attention should be given to monitoring cracks, openings, joints, and other areas where contamination might accumulate.
 - 3.6.2 Measure levels of total and removable surface contamination (see Procedures 2.3 and 3.6) at locations of elevated direct radiation identified by the scan and at additional representative surface locations.
 - 3.6.3 Acceptable surface contamination levels will be established on a project-specific basis, with details, including decontamination instructions, provided in the Survey Work Plan.
- 3.7 Document results of contamination surveys in field records

PROCEDURE 2.3 DIRECT RADIATION MEASUREMENT

1.0 PURPOSE

- 1.1 To describe the method for measuring total alpha and beta radiation levels on equipment and building surfaces.

2.0 RESPONSIBILITIES

- 2.1 The Site Survey Manager is responsible for assuring that this procedure is implemented.
- 2.2 Survey team members are responsible for following this procedure.

3.0 PROCEDURE

3.1 Equipment

- 3.1.1 Ratemeter-scaler: Model 3, Model 2220 or 2221, Ludlum Instrument Corporation; or equivalent
- 3.1.2 Detector: Selected detectors are listed below: Equivalent detectors are also acceptable

Activity	Detector Type	Model
alpha	ZnS scintillator	Ludlum 43-1 or 43-5, Eberline AC3-7 or AC3-8
	gas proportional	Ludlum 43-68
beta	Geiger-Mueller	Ludlum 44-9, Eberline HP-260
	gas proportional	Ludlum 43-68

- 3.1.3 Cables
- 3.1.4 Check source
- 3.1.5 Record forms

3.2 Quality Control Check

- 3.2.1 Assemble instrument, turn on, check battery, and adjust high voltage and threshold, if necessary. Check background and check source responses. Follow the procedures described in Procedure 2.1.

3.3 Direct Measurement

- 3.3.1 When applicable, team members performing instrument checks will calculate the average and maximum "field action levels" for instrument combination based on the specific site criteria and background.

$$\text{Action level (cpm)} = [\text{site criteria (dpm/100 cm}^2\text{)} \times E \times G \times T] + B$$

T = count time (minutes)

E = operating efficiency (counts/disintegration)

G = geometry (total detector area (cm²)/100)

	Total Area	Active Area
43-5 detector area =	80 cm ²	60 cm ²
43-1 detector area =	80 cm ²	50 cm ²
43-68 detector area =	126 cm ²	100 cm ²
44-9 detector area =	20 cm ²	15.5 cm ²
HP-260 detector area =	20 cm ²	15.5 cm ²

B = background (cpm)

A field count at or above this value indicates that further investigation in this location is necessary.

NOTE: For a particular site, the action level may be established as any activity exceeding background.

- 3.3.2 Select an appropriate counting time. A counting time is desired which will achieve a minimum detectable activity (see Procedure 4.2) value less than 50% of the applicable criteria. For most radionuclides a 1-minute count, using the instruments listed above, is adequate to achieve this sensitivity. For radionuclides having guidelines of 5000 dpm/100 cm², average and 15,000 dpm/100 cm², maximum, 0.5 minute counting times may be acceptable.

- 3.3.3 Place the detector face in contact with the surface to be surveyed. The detector face is typically constructed of a very thin and fragile material, so care must be exercised to avoid damage by rough surfaces or sharp objects. (Scans should have been performed, prior to this point, to identify representative locations and locations of elevated direct surface radiation for measurement.)
- 3.3.4 Set the meter timer switch, press the count-reset button, and accumulate the count events until the meter display indicates that the count cycle is complete.
- 3.3.5 Record the count and time on the appropriate record form.
- 3.3.6 If the location has a surface activity level above background, the area around the measurement locations should be scanned to determine the homogeneity of the measured activity level in the area. Dimensions and activity levels of inhomogeneities should be documented on the appropriate record form.
- 3.3.7 The surface activity may be calculated according to Procedure 4.3.

PROCEDURE 3.6 REMOVABLE ACTIVITY SAMPLING

1.0 PURPOSE

- 1.1 To provide guidelines for measuring removable alpha and beta radioactivity on equipment and building surfaces.

2.0 RESPONSIBILITIES

- 2.1 The Site Survey Manager is responsible for assuring this procedure is implemented.
- 2.2 Survey team members are responsible for following this procedure.

3.0 PROCEDURE

3.1 Equipment and Materials

- 3.1.1 Smears, Mazlin wipes, filter papers (like Whatman 47 mm dia. glass fiber) or equivalent
- 3.1.2 Glassine or paper envelopes
- 3.1.3 Record forms
- 3.1.4 Counting equipment

3.2 Sample Collection

NOTE: Direct measurements will be completed before a smear sample is taken.

- 3.2.1 Grasp the smear (filter) paper by the edge, between the thumb and index finger.
- 3.2.2 Applying moderate pressure with two or three fingers, wipe the numbered side of the paper over approximately 100 cm² of the surface.
- 3.2.3 Place the filter in an envelope.

- 3.2.4. Record the smear number, site, date, location of the smear, and name of sample collector on the envelope.
- 3.2.5 Label and secure in accordance with Procedures 3.7 and 3.8. Record pertinent information on the Chain-of-Custody Form.
- 3.2.6 If the direct measurement was elevated, the smear should be monitored (procedures 2.2 and 2.3) to determine whether contaminated material was transferred to the smear. If an activity level greater than 250 cpm is detected, the smear envelope should be marked as such.

NOTE: Smears having activity levels greater than 2500 cpm should be counted using field instrumentation. Decisions regarding further analyses and method of disposal of contaminated smears will be made by the PM and SSM on a case-by-case basis.

3.3 Field Sample Measurement

- 3.3.1 If the object of the survey is to determine if radon or thoron daughter products or other short half-life radionuclides are present, the smears should be counted within 1-2 hours before significant decay of short-lived radionuclides has occurred.
- 3.3.2 If necessary, smears can be counted in the field using portable instrumentation (see Procedure 2.3).
- 3.3.3 Record count and counting time data on the appropriate record form.
- 3.3.4 Subtract the background count (determined by counting blank or unused smear) and convert net count to dpm/100 cm², using proper time and detector efficiency values.

$$\frac{DPM}{100CM^2} = \left(\frac{NETCOUNT}{TIME(MIN) * EFFICIENCY * \left(\frac{COUNT}{DISINTEGRATION} \right) * OTHERMODIFYINGFACTORS} \right)$$

Peters, Dana

From: Middleton, Joeana (McCaskill) <Joeana_Middleton@mccaskill.senate.gov>
Sent: Thursday, October 03, 2013 11:04 AM
To: Brooks, Karl
Subject: Automatic reply: Gov't Shutdown, EPA, and West Lake Landfill

Thank you for reaching out to me. Unfortunately, I am unable to reply to your message.

In the absence of FY 2014 appropriations or a continuing budget resolution for the Legislative Branch, Senator McCaskill's office has been forced to close effective October 1, 2013. The office will reopen when a continuing budget resolution is approved. Senator McCaskill is disappointed with the shutdown of government operations and the inconvenience to Missourians and will continue to work to fund the government as quickly as possible.

Peters, Dana

From: Brooks, Karl
Sent: Thursday, October 03, 2013 11:18 AM
To: Reynolds, Thomas
Subject: FW: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

2nd of 2. Call me at my BB when you have a minute.

Karl Brooks
Regional Administrator
EPA Region 7
913-551-7006

From: Brooks, Karl
Sent: Thursday, October 03, 2013 11:17 AM
To: 'Palmer, Downey (Blunt)'
Cc: Levine, Carolyn
Subject: RE: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

I am the EPA contact on West Lake during furlough.

Karl Brooks
Regional Administrator
EPA Region 7
913-551-7006

From: Palmer, Downey (Blunt) [mailto:Downey_Palmer@blunt.senate.gov]
Sent: Thursday, October 03, 2013 11:05 AM
To: Brooks, Karl
Cc: Levine, Carolyn
Subject: FW: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]
Importance: High

Karl- who is the EPA contact on Westlake is during furlough?

From: esmith@moenviron.org [<mailto:esmith@moenviron.org>]
Sent: Thursday, October 03, 2013 11:55 AM
To: Palmer, Downey (Blunt)
Subject: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]
Importance: High

Downy,

See below and thanks for your time on the phone.

~Ed

Ed Smith
Safe Energy Director
Missouri Coalition for the Environment
(314) 705-4975
www.moenviron.org

----- Original Message -----

Subject: Gov't Shutdown, EPA, and West Lake Landfill

From: <esmith@moenviron.org>

Date: Thu, October 03, 2013 10:05 am

To: "Karl Brooks" <brooks.karl@epa.gov>, Tapia.Cecilia@epa.gov, "Debbie Kring" <kring.debbie@epa.gov>

Cc: "Joeana Middleton" <Joeana_Middleton@mccaskill.senate.gov>, "Lou Aboussie" <Lou.Aboussie@mail.house.gov>, "Kerry DeGregorio" <Kerry_DeGregorio@blunt.senate.gov>, "Bill Otto" <Bill.Otto@house.mo.gov>, "Brecht Mulvihill" <Brecht.Mulvihill@mail.house.gov>, "Kat Smith" <klogansmith@moenviron.org>, hnavarro@moenviron.org

Administrator Brooks,

I called Dan Gravatt's (EPA West Lake project manager) phone number and it appears he is on furlough until the government shutdown is over per his voice mail recording.

Will the Gamma Cone Penetration Test (GCPT) that Republic Services wants to conduct sometime between now and Oct. 10 be monitored by EPA Region 7 for quality assurance and protection of workers/fence-line communities?

Republic Services mentions that ground clearing will be needed to conduct this testing. Will there be equipment set up around the perimeter of the landfill to test for Alpha, Beta, and Gamma radioactivity in real time? If so, what is the protocol for alerting surrounding communities if there is a threat to public health? The reason we are concerned is because Republic Services calls for the use of a **"brush hog" to clear paths for the testing**, which EPA Region 7 has opposed in a comment letter on the plan.

Can Republic Services begin the GCPT work without EPA consent? Has the EPA given consent to start the testing?

Will the GCPT be in any way impacted by the shutdown as it relates to EPA oversight on the GCPT specifically or West Lake management in general?

Please do not consider these questions as part of the monthly exchange between MCE and EPA Region 7. These questions are particularly important considering the government shutdown and expected site study that will be conducted at West Lake, possibly during the government shutdown.

Who should people contact at EPA Region 7 with concerns if activity begins at the landfill and the government is still shutdown?

MCE was caught off-guard by the letter from Republic Services to EPA that was posted on the DNR website on Oct 2 saying it was going to begin work by Oct. 10 or sooner.

MCE would like clarity from the EPA about what is being done to address public safety during the GCPT work, who at EPA can be contacted during shutdown for concerns at the landfill if/when work starts, and what EPA is doing to monitor West Lake during the shutdown, **all before Republic Services is allowed to begin work at the landfill.**

An immediate response is much appreciated given the timely nature of our concerns.

Thanks,
Ed Smith

Ed Smith
Safe Energy Director
Missouri Coalition for the Environment
(314) 705-4975
www.moenviron.org
@showmenocwip

Peters, Dana

From: Reynolds, Thomas
Sent: Thursday, October 03, 2013 11:22 AM
To: Brooks, Karl
Subject: RE: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

Just tried you.

From: Brooks, Karl
Sent: Thursday, October 03, 2013 12:18 PM
To: Reynolds, Thomas
Subject: FW: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

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Cc: "Joeana Middleton" <Joeana_Middleton@mccaskill.senate.gov>, "Lou Aboussie" <Lou.Aboussie@mail.house.gov>, "Kerry DeGregorio" <Kerry_DeGregorio@blunt.senate.gov>, "Bill Otto" <Bill.Otto@house.mo.gov>, "Brecht Mulvihill" <Brecht.Mulvihill@mail.house.gov>, "Kat Smith" <klogansmith@moenviron.org>, hnavarro@moenviron.org

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Peters, Dana

From: Brooks, Karl
Sent: Thursday, October 03, 2013 11:24 AM
To: Reynolds, Thomas
Subject: RE: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

8165168235. Try again: didn't ring

Karl Brooks
Regional Administrator
EPA Region 7
913-551-7006

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To: Brooks, Karl
Subject: RE: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

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Cc: Levine, Carolyn
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Peters, Dana

From: Palmer, Downey (Blunt) <Downey_Palmer@blunt.senate.gov>
Sent: Thursday, October 03, 2013 1:19 PM
To: Brooks, Karl
Cc: Levine, Carolyn; DeGregorio, Kerry (Blunt)
Subject: RE: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]

Thank you.

From: Brooks, Karl [mailto:brooks.karl@epa.gov]
Sent: Thursday, October 03, 2013 12:17 PM
To: Palmer, Downey (Blunt)
Cc: Levine, Carolyn
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Regional Administrator
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Sent: Thursday, October 03, 2013 11:05 AM
To: Brooks, Karl
Cc: Levine, Carolyn
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Importance: High

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Subject: [FWD: Gov't Shutdown, EPA, and West Lake Landfill]
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Safe Energy Director
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Thanks,
Ed Smith

Ed Smith
Safe Energy Director
Missouri Coalition for the Environment
(314) 705-4975

Peters, Dana

From: Brooks, Karl
Sent: Wednesday, October 16, 2013 10:05 AM
To: Tapia, Cecilia
Subject: FW: EPA letter
Attachments: EPA Ltr RE Shutdown.pdf

Fyi and let's discuss later today.

Karl Brooks
Regional Administrator
EPA Region 7
913-551-7006

From: Vaught, Laura
Sent: Wednesday, October 16, 2013 9:42 AM
To: Brooks, Karl
Cc: Rupp, Mark
Subject: FW: EPA letter

FYI if you haven't seen this.

From: Bond, Patrick (McCaskill) [mailto:Patrick_Bond@mccaskill.senate.gov]
Sent: Wednesday, October 16, 2013 10:38 AM
To: Vaught, Laura
Subject: FW: EPA letter

Attached is the letter I mentioned.

From: Farnsworth, Jim [<mailto:jim.farnsworth@ago.mo.gov>]
Sent: Tuesday, October 15, 2013 02:28 PM Eastern Standard Time
To: Dwyer, Julie (McCaskill)
Subject: EPA letter

Julie,

Please find attached a copy of the letter we discussed on the phone a few minutes ago. Thanks.

Jim

James B. Farnsworth
Chief of Staff
Missouri Attorney General's Office
PO Box 899
Jefferson City, MO 65102

Ph: 573-751-8807
fax: 573-751-2203

This email message, including the attachments, is from the Missouri Attorney General's Office. It is for the sole use of the intended recipient(s) and may contain confidential and privileged information, including that covered by § 32.057, RSMo. Any unauthorized review, use, disclosure or distribution is prohibited.

If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message. Thank you.



ATTORNEY GENERAL OF MISSOURI

JEFFERSON CITY

65102

CHRIS KOSTER
ATTORNEY GENERAL

P.O. Box 899
(573) 751-8321

October 15, 2013

Gina McCarthy, Administrator
US Environmental Protection Agency
USEPA Headquarters
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, DC 20460

Re: Westlake Landfill Site

Dear Administrator McCarthy:

I am writing to respectfully urge the EPA to reconsider its position on delaying work at the Westlake Landfill in Bridgeton, Missouri. On October 7, 2013, EPA Region 7 Regional Administrator Karl Brooks issued a letter indicating that the Gamma Cone Penetration Testing ("GCPT"), which Bridgeton Landfill had agreed to perform beginning October 10, 2013, would not commence on schedule because, due to "the funding hiatus" associated with the shutdown of the federal government, your agency is currently unable to oversee the testing.

The GCPT field work, which will test the Westlake Landfill for radioactive material in advance of constructing a protective wall, or "isolation barrier," between Westlake Landfill Site and the adjacent Bridgeton Landfill, is a prerequisite to the larger work that EPA and the State of Missouri have undertaken to protect the public and the environment. It is essential that this work proceed without delay.

As you may know, the Bridgeton Landfill, located directly adjacent to the Westlake Landfill Site, is currently undergoing a subsurface smoldering event. Although conditions at the site are being closely monitored, the smoldering event may migrate unexpectedly or a new one may develop spontaneously. The isolation barrier is intended to guard against the possibility that the smoldering event at the Bridgeton Landfill reaches the radioactive material at Westlake. The sooner work can begin on this essential safeguard, the better protected the public will be.

Timing is crucial. Currently, weather conditions are ideal for work in the field, but in a few short weeks, cold winter weather may force outdoor work to be suspended until the spring.

Gina McCarthy, Administrator
October 15, 2013
Page 2

As a result, every day lost impedes not only the testing at the Westlake Landfill, but also the construction of the isolation barrier itself.

Bridgeton Landfill has committed to performing the GCPT and building the isolation barrier, and they are ready to begin work immediately. Likewise, the Missouri Department of Natural Resources stands ready and willing to do everything necessary to ensure timely and safe execution of the project.

Therefore, I respectfully request EPA to reconsider delaying the GCPT and allow this essential work to move forward.

Respectfully,

A handwritten signature in black ink, appearing to read "Chris Koster", with a long horizontal flourish extending to the right.

CHRIS KOSTER
Attorney General

cc: Senator Claire McCaskill
Senator Roy Blunt
Congressman William Lacy Clay, Jr.
Congresswoman Ann Wagner
Karl Brooks, EPA, Region 7

Peters, Dana

From: Distefano, Nichole
Sent: Friday, February 28, 2014 2:47 PM
To: Brooks, Karl
Subject: FW: Delegation Letter RE: Westlake
Attachments: 02.28.14 Westlake Letter to EPA Region 7.pdf

Nichole Distefano
Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

From: Bond, Patrick (McCaskill) [mailto:Patrick_Bond@mccaskill.senate.gov]
Sent: Friday, February 28, 2014 3:42 PM
To: Sanders, LaTonya; Distefano, Nichole
Subject: Delegation Letter RE: Westlake

Attached is a letter that went into the mail today to Karl Brooks RE: the Westlake site.
Please let me know if you have any questions.
Thanks,
Pat

Congress of the United States

Washington, DC 20510

February 28, 2014

Karl Brooks
Region 7 Administrator
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

Dear Administrator Brooks:

As you know, the radiologically impacted material at the Westlake Landfill site and the subsurface smoldering event at the Bridgeton Sanitary Landfill continue to be issues of great concern to us and our constituents in the greater St. Louis community.

We appreciate the Environmental Protection Agency's efforts in addressing the immediate concern of isolating the Westlake site from the subsurface smoldering event at the Bridgeton Landfill and your efforts to keep the community informed of your efforts. However, going forward we believe that the Agency should work with the Army Corps of Engineers and its Formerly Utilized Sites Remedial Action Program (FUSRAP) operations in the St. Louis area.

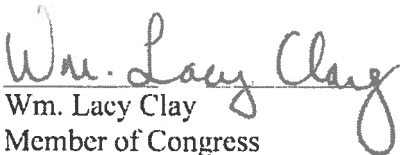
The St. Louis Corps' handling of similar radiologically impacted material at the St. Louis Downtown Site, the St. Louis Airport Site and Vicinity Properties, Latty Avenue, and the Madison Site has been a well-documented success. Given the Corps' expertise in this area, and the local community's faith in the Corps' FUSRAP mission, we request that the EPA consider contracting directly with the Corps to handle any and all remediation needed at the site. Additionally, we believe that it would also be beneficial for the Agency to contract with the Corps to conduct the ongoing review of the Record of Decision to determine the appropriate long-term remediation.

We appreciate your consideration of our request and look forward to your response.


Sincerely,



Claire McCaskill
United States Senator



Wm. Lacy Clay
Member of Congress



Roy Blunt
United States Senator



Ann Wagner
Member of Congress

Peters, Dana

From: Sanders, LaTonya
Sent: Monday, March 03, 2014 9:56 AM
To: Brooks, Karl; Hague, Mark; Hammerschmidt, Ron; Tapia, Cecilia
Cc: Gravatt, Dan; Field, Jeff; Thomas, Hattie; Peterson, Mary
Subject: FW: Delegation Letter RE: Westlake
Attachments: 02.28.14 Westlake Letter to EPA Region 7.pdf

FYI...

This letter will be logged into CMS for a response.

Thanks.

From: Bond, Patrick (McCaskill) [mailto:Patrick_Bond@mccaskill.senate.gov]
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To: Sanders, LaTonya; Distefano, Nichole
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As you know, the radiologically impacted material at the Westlake Landfill site and the subsurface smoldering event at the Bridgeton Sanitary Landfill continue to be issues of great concern to us and our constituents in the greater St. Louis community.

We appreciate the Environmental Protection Agency's efforts in addressing the immediate concern of isolating the Westlake site from the subsurface smoldering event at the Bridgeton Landfill and your efforts to keep the community informed of your efforts. However, going forward we believe that the Agency should work with the Army Corps of Engineers and its Formerly Utilized Sites Remedial Action Program (FUSRAP) operations in the St. Louis area.

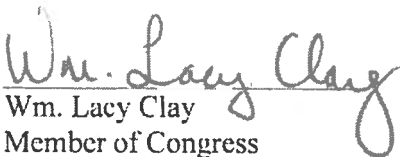
The St. Louis Corps' handling of similar radiologically impacted material at the St. Louis Downtown Site, the St. Louis Airport Site and Vicinity Properties, Latty Avenue, and the Madison Site has been a well-documented success. Given the Corps' expertise in this area, and the local community's faith in the Corps' FUSRAP mission, we request that the EPA consider contracting directly with the Corps to handle any and all remediation needed at the site. Additionally, we believe that it would also be beneficial for the Agency to contract with the Corps to conduct the ongoing review of the Record of Decision to determine the appropriate long-term remediation.

We appreciate your consideration of our request and look forward to your response.

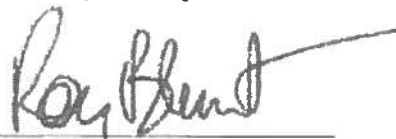
Sincerely,



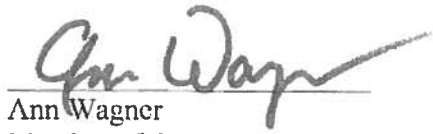
Claire McCaskill
United States Senator



Wm. Lacy Clay
Member of Congress



Roy Blunt
United States Senator



Ann Wagner
Member of Congress



**EPA Press Release: EPA Signs Record of Decision on West Lake Landfill
Superfund Site in Bridgeton, Mo.**

john_stoody, judy_dungan,
LaTonya Sanders to: nichole_distefano, bob_burns,
mbogdanovich, edwillam.masse

05/29/2008 10:53 AM



West Lake Landfill ROD PR 05.29.08.doc

LaTonya E. Sanders
Public Affairs Specialist/Congressional Liaison
U.S. Environmental Protection Agency, Region 7
Office of Regional Administrator
Office of Public Affairs
901 N. 5th Street
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PH: 913-551-7555
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EM: sanders.latonya@epa.gov

U.S. Environmental Protection Agency, Region 7
901 N. Fifth St., Kansas City, KS 66101

Iowa, Kansas, Missouri, Nebraska, and Nine Tribal Nations

EPA Signs Record of Decision on West Lake Landfill Superfund Site in Bridgeton, Mo.

Contact Information: Chris Whitley, (913) 551-7394, whitley.christopher@epa.gov

Environmental News

FOR IMMEDIATE RELEASE

(Kansas City, Kan., May 29, 2008) - Installations of a multi-layered engineered cover and a system of new monitoring wells are among a series of key remedial actions that will best serve to protect groundwater resources and human health at the West Lake Landfill Superfund Site in Bridgeton, Mo., according to a plan formally approved today by the EPA.

EPA's Record of Decision document on the West Lake Landfill site also includes public comments that the Agency received about its preferred remedy, which was presented at three public meetings held June 22, 2006; September 14, 2006; and March 27, 2008.

"We believe it is imperative to move ahead by placing a properly engineered cover on the landfill," EPA Region 7 Administrator John Askew said. "The cover would serve as a stable barrier to minimize future exposure to waste material, as the landfill currently has no such protective cap."

EPA's design process also calls for the installation of a new system of monitoring wells around the site, and for long-term groundwater sampling to occur, with the results of all tests to be made available to the public.

The agency's next steps for West Lake Landfill will be to work closely with the site's owners and responsible parties as they identify and secure the services of various contractors to develop specific engineering designs, construct the landfill cover, install the monitoring wells, and establish specific schedules and measures for sampling procedures and sharing test results.

Full text of the West Lake Landfill Superfund Site's Record of Decision can be found at http://www.epa.gov/region07/news_events/legal/west_lake_landfill_ROD2008.pdf.

Other official documents and information pertaining to the site are available for public review at the St. Louis County Library's Bridgeton Trails Branch, 3455 McKelvey Road, in Bridgeton, Mo.; or at the EPA Region 7 Records Center, 901 North 5th Street, in Kansas City, Kan.

###

The Superfund program applies scientific solutions to hazardous waste sites.
Learn more at: <http://www.epa.gov/superfund/index.htm>



Courtesy Visit Follow-Up Action Items

LaTonya Sanders to: bob_burns

08/04/2008 04:40 PM

From: LaTonya Sanders/R7/USEPA/US
To: bob_burns@mccaskill.senate.gov

Hi Bob:

Here is a summary of follow-up action items from our courtesy visit:

1. **West Lake** Landfill ROD and responsiveness summary. Below are the links.

http://www.epa.gov/region07/news_events/legal/west_lake_landfill_ROD2008.pdf

http://www.epa.gov/region07/news_events/legal/ResponsivenessSummaryWestLake05-29-08.pdf

2. Frequently Asked Questions and Information on Compact Fluorescent Light Bulbs (CFLs) and Mercury Fact Sheet. Below is the link.

http://www.energystar.gov/ia/partners/promotions/change_light/downloads/Fact_Sheet_Mercury.pdf

3. Copies of the Flood Cleanup and the Air in Your Home booklet have been mailed to you.

4. Unfortunately, we have no hardbound copies available of the Small Entity Compliance Guide to Renovate Right: EPA's Lead-Based Paint Renovation, Repair and Painting Program. However, it is available to download.

<http://www.epa.gov/lead/pubs/sbcomplianceguide.pdf>

5. You asked about the city of LeMay that had lead contamination. I searched and found that in 2000, EPA awarded St. Louis County a Brownfields grant to expand its brownfields investigations into the community of LeMay. Please take a look at the fact sheet and let me know if this is what you want an update on.

http://www.epa.gov/brownfields/html-doc/sst_loct.htm

Thanks!

LaTonya E. Sanders
Public Affairs Specialist/Congressional Liaison
U.S. Environmental Protection Agency, Region 7
Office of Regional Administrator
Office of Public Affairs
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Kansas City, KS 66101

PH: 913-551-7555
FX: 913-551-7066

EM: sanders.latonya@epa.gov



West Lake Landfill Update
LaTonya Sanders to: Dukes, Corey (McCaskill)

04/05/2011 11:52 AM

Hi Corey,

Per your request.



West Lake Landfill Status Update 04-04-11.doc

LaTonya E. Sanders
U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
901 N. 5th Street
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EM: sanders.latonya@epa.gov

- The radiologically-contaminated waste material can be safely contained and managed in place consistent with the selected remedy. Nevertheless, given the level of interest, EPA has decided to perform a Supplemental Feasibility Study (SFS) to evaluate the feasibility of full-scale excavation options in more detail than was used during the Remedial Investigation/Feasibility Study (RI/FS).
- The SFS process began in early December 2009. Later in December 2009, EPA decided to allow the PRPs to perform the SFS under the existing Consent Decree.
- The final SFS work plan was approved and released to the public in June 2010. EPA is not taking public comment on the final work plan. The SFS will evaluate in greater detail the Record of Decision (ROD) remedy, as well as two excavation remedies (one with on-site disposal and one with off-site disposal).
- The draft SFS report was received on July 23, 2010 and has been reviewed. The PRPs are currently revising the report in response to an EPA comment letter dated November 10, 2010. The final SFS report is scheduled to be completed in September 2011, after which it will be released to the public. EPA will not take public comment on the final report.
- The final SFS report will not reach a conclusion or make a recommendation on whether to retain the ROD remedy or select a different remedy. EPA plans to hold a public meeting shortly after the final SFS report is released to discuss the report. After this meeting, EPA will prepare a separate decision document based on the SFS which will state whether EPA will retain the ROD remedy or select a different remedy. This decision document will be released for public comment.
- The St. Louis – Lambert Airport has a negative easement on the West Lake landfill, which prevents further landfill activities there. This easement was placed to reduce bird strike hazards to aircraft, and was required as part of the FAA ROD approving construction of the new western runway at the Airport. The excavation remedies being evaluated in the SFS incorporate mitigative measures to address this negative easement.
- EPA briefed St. Louis – Lambert Airport personnel on the SFS process on September 7, 2010. Airport personnel expressed strong opposition to both excavation alternatives being considered in the SFS due to increased risks for bird strikes. The Airport provided a letter dated September 20, 2010, formally stating their opposition to these excavation alternatives.
- There are two communities near West Lake; a trailer park approximately ¼ mile southeast, and a small residential development (Spanish Village) ½ mile south. Research has indicated that these specific residential areas may be subject to disproportionate environmental impacts on an economically-disadvantaged population, commonly known as an Environmental Justice (EJ) population. The nearby SLAPS rail spur just north of the Airport, where waste may be transloaded from trucks to railcars for shipment if an excavation remedy was selected, is in a known EJ area. The post-SFS decision document will consider these EJ issues as part of the decision-making process.



West Lake Landfill Update
LaTonya Sanders to: mark_fowler

07/11/2012 05:28 PM

Hi Mark,

I'm sending you a quick note to let you know that I haven't forgotten about your request for an update on the **West Lake** Landfill.

Still working on it. Hope to have something to you soon.

Thanks.

LaTonya E. Sanders

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FX: 913-551-7066
EM: sanders.latonya@epa.gov

Get tips to protect children's health at
http://www.epa.gov/region7/citizens/childrens_health.htm



Re: West Lake Landfill Public Meeting 
LaTonya Sanders to: Middleton, Joeana (McCaskill)

01/18/2013 07:56 AM

Hi Joeana,

Thanks for letting me know.

Also, my notifications go to Mattie and Brendan.

I can add you to my distribution list if you like.

Please let me know.

Thanks.

LaTonya E. Sanders

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219
913-551-7555

"Middleton, Joeana (McCaskill)"

Hi LaTonya, I plan to attend tonigh...

01/17/2013 02:42:05 PM

From: "Middleton, Joeana (McCaskill)" <Joeana_Middleton@mccaskill.senate.gov>
To: LaTonya Sanders/R7/USEPA/US@EPA
Date: 01/17/2013 02:42 PM
Subject: **West Lake** Landfill Public Meeting

Hi LaTonya,

I plan to attend tonight's public meeting regarding **West Lake** Landfill. Our DC staff gave me a heads up about the meeting.

Thank you,
Jo

Joeana L. Middleton
Regional Director
Office of U.S. Senator Claire McCaskill

5850 Delmar Boulevard, Suite A
Saint Louis, MO 63112
Phone: (314) 367-1364


Fax: (314) 361-8649

joeana_middleton@mccaskill.senate.gov

CONNECT with CLAIRE at **MCCASKILL.SENATE.GOV**





RE: West Lake Landfill Update 
LaTonya Sanders to: Fowler, Mark (McCaskill)

01/30/2013 09:12 AM

Good Morning Mark:

Below are answers to your questions.

If you need anything else, please let me know.

Thanks.

1. The EPA has already asked the potentially responsible parties (PRPs) to conduct additional groundwater sampling events. The schedule and details of these events have not yet been worked out, but we expect the first of these events to be conducted in the first half of 2013. The EPA is also planning to conduct its own measurements of gamma radiation from the surface of the landfill using our ASPECT airplane, and this will likely occur in the spring of 2013.
2. We do plan to have additional public availability sessions for the site to share new data with the public as it becomes available, but none has been scheduled yet. The dates of future public availability sessions will be advertised as they have been in the past, by fact sheet mailings and newspaper announcements. Our fact sheets are posted to our website.
3. The underground fire generating the odors is taking place in a landfill cell at the site that is under the sole jurisdiction of the Missouri Department of Natural Resources. We frequently speak with MDNR regarding its plans to address the landfill conditions but suggest you contact Chris Nagel of MDNR's solid waste program to obtain the most accurate and up to date information, at 573-680-5146

LaTonya E. Sanders

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219
913-551-7555

"Fowler, Mark (McCaskill)" Hi LaTonya, How are you? Hope you ha...

01/28/2013 11:10:40 AM

From: "Fowler, Mark (McCaskill)" <Mark_Fowler@mccaskill.senate.gov>
To: LaTonya Sanders/R7/USEPA/US@EPA
Date: 01/28/2013 11:10 AM
Subject: RE: **West Lake** Landfill Update

Hi LaTonya,

How are you? Hope you had a good weekend. I was hoping to touch base with you regarding **West Lake**

landfill again. One of our St. Louis staff members named Jo Middleton was able to attend the public availability session on Jan 17 and said she got some good information from it so thanks for hosting. I had a couple of follow up questions though that I was hoping you could help me with.

1. Now that the initial groundwater sampling and vertical sampling tests have been conducted, what will be the next step? Will you continue conducting both? If I remember right, I think you guys had mentioned the results were inconclusive and more tests were scheduled so just wanted to see what the timeline looked like there.
2. Are there more public availability sessions scheduled already? And if so will those dates be available on your website?
3. I know the MO DNR official addressed the subsurface smoldering event / odors that people have been smelling. This may be out of your jurisdiction, but do you have an idea of what DNR 's plans are to tackle that situation?

Thanks again for your help and have a good week.

-Mark

Mark Fowler
Legislative Correspondent
Office of Senator Claire McCaskill
(202) 224-6154

From: Sanders.Latonya@epamail.epa.gov [mailto:Sanders.Latonya@epamail.epa.gov]
Sent: Wednesday, January 09, 2013 2:15 PM
To: Fowler, Mark (McCaskill)
Subject: RE: West Lake Landfill Update

Great, thanks Mark.

--LaTonya

"Fowler, Mark (McCaskill)" ---01/09/2013 11:59:00 AM---Hi LaTonya, Not a problem at all thanks for getting back to me. It sounds like someone from our St.

From: "Fowler, Mark (McCaskill)" <Mark_Fowler@mccaskill.senate.gov>
To: LaTonya Sanders/R7/USEPA/US@EPA
Date: 01/09/2013 11:59 AM
Subject: RE: West Lake Landfill Update

Hi LaTonya,

Not a problem at all thanks for getting back to me. It sounds like someone from our St. Louis office is going to attend so I can save you guys a little work and just get a recap from her after the meeting. Appreciate the help though and have a good rest of the week.

Thanks,
Mark

From: Sanders.Latonya@epamail.epa.gov [mailto:Sanders.Latonya@epamail.epa.gov]
Sent: Wednesday, January 09, 2013 12:16 PM
To: Fowler, Mark (McCaskill)
Subject: RE: **West Lake** Landfill Update

Hi Mark,

I just returned to the office yesterday after being away for three weeks and trying to go through hundreds of emails is a process. Sorry that I'm just now getting to yours.

I just sent you the public meeting notice along with Mattie Moore and Brendan Fahey.

Would you like site specific updates before the public meeting next week or after we have met with stakeholders?

--LaTonya

"Fowler, Mark (McCaskill)" ---01/02/2013 02:12:43 PM---Hi LaTonya, How are you? Hope you had a good holiday break. I wanted to touch base again about **West**

From: "Fowler, Mark (McCaskill)" <Mark_Fowler@mccaskill.senate.gov>
To: LaTonya Sanders/R7/USEPA/US@EPA
Date: 01/02/2013 02:12 PM
Subject: RE: **West Lake** Landfill Update

Hi LaTonya,

How are you? Hope you had a good holiday break. I wanted to touch base again about **West Lake** Landfill in St. Louis and see if there have been any updates on the site and what the current status is.

1. Have the results of the groundwater sampling been published? If so, what were the findings?
2. Have the gamma scans been conducted?
3. Have any additional studies been completed or proposed?
4. Did you end up holding a public availability session near the end of 2012? If so, what were the findings there?

Thanks again for your help, and if you have any other relevant info, we'd appreciate it. I've attached the Word doc you sent last time in case that helps. Thanks and have a good rest of the week.

Mark Fowler

Legislative Correspondent

Office of Senator Claire McCaskill
(202) 224-6154

From: LaTonya Sanders [<mailto:Sanders.Latonya@epamail.epa.gov>]
Sent: Monday, September 10, 2012 5:38 PM
To: Fowler, Mark (McCaskill)
Subject: RE: **West Lake** Landfill Update

You too Mark!

--LaTonya

"Fowler, Mark (McCaskill)" ---09/10/2012 04:35:55 PM---LaTonya, Great thanks for the information and assistance. Have a good rest of the week.

From: "Fowler, Mark (McCaskill)" <Mark_Fowler@mccaskill.senate.gov>
To: LaTonya Sanders/R7/USEPA/US@EPA
Date: 09/10/2012 04:35 PM
Subject: RE: **West Lake** Landfill Update

LaTonya,

Great thanks for the information and assistance. Have a good rest of the week.

Best,
Mark

From: LaTonya Sanders [<mailto:Sanders.Latonya@epamail.epa.gov>]
Sent: Monday, September 10, 2012 5:31 PM
To: Fowler, Mark (McCaskill)
Subject: RE: **West Lake** Landfill Update

Hi Mark:

-Groundwater Sampling: Field sampling began July 31 and concluded August 16. Sample data is being received from the lab. We expect a report from the PRPs in October.

-Gamma Scanning: These have not begun yet, due to issues with trees and vegetation on the radiologically-contaminated areas which prevent access for the surface gamma scans. The EPA plans to break out the down-hole gamma logging fieldwork and conduct it separately, in October or November. We are not sure when will be able to do the surface gamma scan.

-Additional Studies: The PRPs are working on a scope for the supplemental SFS to do additional studies to address the National Remedy Review Board's comments, but they have not yet submitted it to the EPA. We have no proposed submittal date for this scope.

-Public Availability Session: We are waiting on the data before we plan the session and we are also

coordinating with the Bridgeton Mayor and City Council. We hope to have it by the end of the year.

Let me know if you need anything else.

LaTonya E. Sanders

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
901 N. 5th Street
Kansas City, KS 66101

PH: 913-551-7555

FX: 913-551-7066

EM: sanders.latonya@epa.gov

Get tips to protect children's health at

http://www.epa.gov/region7/citizens/childrens_health.htm

"Fowler, Mark (McCaskill)" ---09/10/2012 03:07:40 PM---Hi LaTonya, Hope all is well since the last time we spoke. I wanted to touch base again and see if

From: "Fowler, Mark (McCaskill)" <Mark_Fowler@mccaskill.senate.gov>

To: LaTonya Sanders/R7/USEPA/US@EPA

Date: 09/10/2012 03:07 PM

Subject: RE: **West Lake** Landfill Update

Hi LaTonya,

Hope all is well since the last time we spoke. I wanted to touch base again and see if there is any additional news on **West Lake** landfill situation. Previously, you had mentioned that groundwater sampling would begin in July 2012 and Gamma scan evaluations would begin in August 2012. Are both of those currently underway? And have there been any additional studies proposed? Also, you had mentioned that EPA would be hosting a public availability session near the end of 2012 to provide data results/take questions, so I wanted to see if a date/time had been set for that yet.

Thanks again for your help and have a good week,
Mark

Mark Fowler

Legislative Correspondent
Office of Senator Claire McCaskill
(202) 224-6154

From: LaTonya Sanders [<mailto:Sanders.Latonya@epamail.epa.gov>]

Sent: Thursday, July 26, 2012 2:15 PM

To: Fowler, Mark (McCaskill)
Subject: RE: **West Lake** Landfill Update

Hi Mark,

I apologize for being so late in providing you this update.

Once you review, if you have any questions or concerns, please let me know.

Thanks!

(See attached file: **West Lake** Landfill Site Update - July 2012.doc)

LaTonya E. Sanders

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Get tips to protect children's health at
http://www.epa.gov/region7/citizens/childrens_health.htm

"Fowler, Mark (McCaskill)" ---07/24/2012 06:14:44 PM---Hi LaTonya, I wanted to check back in and see if you were able to get any answers about the **West Lake**

From: "Fowler, Mark (McCaskill)" <Mark_Fowler@mccaskill.senate.gov>
To: LaTonya Sanders/R7/USEPA/US@EPA
Date: 07/24/2012 06:14 PM
Subject: RE: **West Lake** Landfill Update

Hi LaTonya,

I wanted to check back in and see if you were able to get any answers about the **West Lake** Landfill situation. Please let me know if so.

Thanks
Mark

Mark Fowler

Legislative Correspondent
Office of Senator Claire McCaskill
(202) 224-6154

From: LaTonya Sanders [mailto:Sanders.Latonya@epamail.epa.gov]
Sent: Wednesday, July 11, 2012 6:28 PM
To: Fowler, Mark (McCaskill)
Subject: West Lake Landfill Update

Hi Mark,

I'm sending you a quick note to let you know that I haven't forgotten about your request for an update on the West Lake Landfill.

Still working on it. Hope to have something to you soon.

Thanks.

LaTonya E. Sanders

U.S. Environmental Protection Agency, Region 7
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Get tips to protect children's health at
http://www.epa.gov/region7/citizens/childrens_health.htm[attachment "West Lake
Landfill Site Update - July 2012.doc" deleted by LaTonya Sanders/R7/USEPA/US]

Sanders, LaTonya

Subject: West Lake Landfill Update for Congressional Staff (Sen. McCaskill, Sen. Blunt, Rep. Clay, Rep. Wagner)

Start: Tue 10/22/2013 10:00 AM

End: Tue 10/22/2013 10:30 AM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Sanders, LaTonya

Required Attendees: Brecht Mulvihill; Brendan Fahey; Downey Palmer; Edwilla Massey; Erik Rust; Joeana Middleton; John Scates; Kerry DeGregorio; Lou Aboussie; Mark Fowler; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Patrick Bond; Pauline Jamry; Steven Engelhardt; Tod Martin

Call in: 1-866-299-3188

Access code: 9135517444

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, December 05, 2013 10:33 AM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

I had a wonderful Thanksgiving holiday, I hope yours was as well.

We didn't have a public meeting scheduled for West Lake in October.

Our plan is to hold a public meeting in January.

We're in the final review process of the groundwater data from July.

We're also discussing meeting logistics and format.

I hope to have a firm date to you soon.

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

From: Middleton, Joeana (McCaskill) [mailto:Joeana_Middleton@mccaskill.senate.gov]
Sent: Wednesday, December 04, 2013 9:56 AM
To: Sanders, LaTonya
Subject: Rescheduled West Lake Community Meeting

Hi LaTonya,

I hope you had a nice Thanksgiving holiday.

I'm writing to find out if there's any updated information regarding the West Lake public meeting that would have taken place last month, I assume, if the shutdown hadn't occurred. Is there any news on that front?

Thanks,
Jo

Joeana L. Middleton
Regional Director
Office of U.S. Senator Claire McCaskill

5850 Delmar Boulevard, Suite A
Saint Louis, MO 63112
Phone: (314) 367-1364
Fax: (314) 361-8649
joeana_middleton@mccaskill.senate.gov

CONNECT with CLAIRE at MCCASKILL.SENATE.GOV



Sanders, LaTonya

Subject: West Lake Landfill Briefing for Congressional Staff

Start: Mon 12/9/2013 9:30 AM

End: Mon 12/9/2013 10:00 AM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Sanders, LaTonya

Required Attendees: Brecht Mulvihill; Brendan Fahey; Downey Palmer; Edwilla Massey; Erik Rust; Joeana Middleton; John Scates; Kerry DeGregorio; Lou Aboussie; Mark Fowler; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Patrick Bond; Pauline Jamry; Steven Engelhardt; Tod Martin

Call in number: 866-299-3188

Access Code: 9135517444

Sanders, LaTonya

Subject: West Lake Landfill Briefing for Congressional Staff

Start: Mon 12/9/2013 9:30 AM

End: Mon 12/9/2013 10:00 AM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Sanders, LaTonya

Required Attendees: Brecht Mulvihill; Brendan Fahey; Downey Palmer; Edwilla Massey; Erik Rust; Joeana Middleton; John Scates; Kerry DeGregorio; Lou Aboussie; Mark Fowler; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Patrick Bond; Pauline Jamry; Steven Engelhardt; Tod Martin

Call in number: 866-299-3188

Access Code: 9135517444



Koster
Westlake 11-29-20



Karl Brooks
Letter.pdf



Elected Official
Briefing -- W...



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

NOV 29 2013

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable Chris Koster
Attorney General of Missouri
P.O. Box 899
Jefferson City, MO 65102

Dear Mr. Koster:

Thank you for your letter of November 27, 2013, regarding work overseen by the Environmental Protection Agency at the West Lake Landfill Superfund site. This agency appreciates the State of Missouri's interest in expediting safe construction of the isolation barrier at the West Lake/Bridgeton Landfill complex in Bridgeton, Missouri.

After reviewing the preliminary Gamma Cone Penetrometer Testing (GCPT) that suggests the presence of some radiologically-impacted material well beneath the surface of the West Lake Landfill, Region 7 has ordered PRP contractors working under EPA oversight to perform a more comprehensive engineering survey, at and below the surface, in the area between West Lake Landfill and Bridgeton Sanitary Landfill. The expanded survey will provide additional information to more precisely determine the extent and location of radiologically-impacted material.

The preliminary data, while subject to change, does not change this agency's assessment that the buried waste does not currently pose a threat to public health and safety. I want to emphasize three key facts about the West Lake landfill given the GCPT preliminary findings in Area 1: (1) The material has been preliminarily identified to be many feet below the surface. (2) The entire survey area remains within a secured portion of the site closed to public access. (3) Contractors and EPA Region 7 staff working at the site are following detailed health and safety plans that provide for their protection while this work continues, and will implement additional health protections, should survey work warrant, in accordance with applicable health and safety protocols.

When the survey is complete and all available data is finalized and subjected to quality control checks, EPA Region 7 will make this data available to the public. The agency will also use this data to inform its decisions about the placement and design of the isolation barrier, and to inform its reconsideration of the 2008 ROD for West Lake. Detailed plans for construction of an isolation barrier are expected to be developed early in 2014.

Thank you for working with the Environmental Protection Agency to accomplish these important objectives.

Sincerely,


Karl Brooks





ATTORNEY GENERAL OF MISSOURI

JEFFERSON CITY

65102

CHRIS KOSTER
ATTORNEY GENERAL

P.O. Box 899
(573) 751-3321

November 27, 2013

Karl Brooks
Environmental Protection Agency
Regional Administrator, Region 7
11201 Renner Blvd.
Lenexa, Kansas 66219

Dear Regional Administrator Brooks,

The State of Missouri has received a Phase I Status Report detailing the preliminary results of the Gamma Cone Penetrometer Testing that EPA has required in preparation for the installation of an isolation barrier at the Westlake site in Bridgeton, Missouri. After reviewing the report, the State is concerned about some of the raw data summaries, which suggest the presence of higher-than-background-level radioactivity at depth outside the area where previous maps represented the radioactive material was located.

In light of this new preliminary data, it is critically important that EPA direct the completion of a comprehensive survey of the Westlake site to determine with certainty the boundary lines encompassing the radioactive material. The implementation of engineering controls, including the isolation barrier intended to separate the radioactive material in Westlake from the smoldering event in the Bridgeton landfill, depends on an accurate picture of the radiological profile of the site. The State calls upon EPA to commence this comprehensive survey without delay.

In addition, due to the importance of this data and the high level of public interest in the site, the State strongly encourages EPA to make the information publicly available as soon as EPA validates the data for accuracy.

We look forward to hearing from you and continuing to work with you in addressing the difficult challenges ahead.

Respectfully,

A handwritten signature in black ink, appearing to read "Chris Koster".

CHRIS KOSTER
Attorney General



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

**Elected Official Briefing
West Lake Preliminary Draft GCPT Field Screening
December 9, 2013**

- As part of the preparatory work for the installation of an isolation barrier, EPA directed the PRPs to conduct field studies and engineering surveys in two phases.
- Contractors working under EPA oversight began Phase 1 of the engineering survey October 28. Work concluded November 26.
- Phase 1 is GCPT - Gamma Cone Penetrometer Testing. GCPT work pushes a probe with a gamma radiation detector into the ground to determine if there are readings above background caused by radioactive-impacted material (RIM) at depth/beneath surface.
- Phase 1 complements March 2013 ASPECT aerial survey of surface gamma radiation. That survey confirmed surface radiation at West Lake is in same status as in mid-1990s: contained and does not pose health risks to public.
- On November 25, 2013, Feezor Engineering delivered to EPA a preliminary update of the GCPT sampling. Based on preliminary, uncorrelated data that is subject to change upon further quality control checks, the GCPT has detected some radiologically-impacted material beneath the surface of the West Lake landfill at a handful of locations generally situated along one edge of the area being surveyed.
- EPA Region 7 has received concerns from the Missouri Attorney General's Office and the MDNR about how GCPT findings affect isolation barrier construction and our mapping of RIM location. EPA agrees with the State of Missouri that the extent and location of radiologically-impacted material at the West Lake Landfill Site must be well mapped to support: 1) barrier construction design and schedule; 2) site worker safety, including employees of waste handlers and asphalt plant; 3) community safety; 4) ROD reconsideration using accurate, current data about RIM.
- At EPA's direction and under its oversight, the potentially responsible parties have agreed to promptly expand and intensify their survey work to investigate for the presence of this material.
- The preliminary data, while subject to change, does not change this Agency's assessment that the buried waste does not currently pose a threat to public health and safety.
- We want to emphasize 3 key facts: 1.) the material has been preliminarily identified 24-34 feet below the surface. 2.) the entire survey area remains within a secured portion of the site closed to public access. 3.) contractors and EPA Region 7 staff working at the site followed detailed health



and safety plans that provide for their protection while the work continued. Any additional health protections would be conducted in accordance with applicable health and safety protocols.

- When the survey data has been finalized and subjected to quality control checks, EPA Region 7 will make this data available to the public.
- We do intend to discuss the preliminary results with the Community Advisory Group (CAG) on December 16. The discussion will also include the 3rd round of groundwater data.

For More Information:

LaTonya Sanders, Congressional Liaison, 913-551-7555, sanders.latonya@epa.gov

Sarah Hatch, State and Local Governmental Liaison, 913-551-7199, hatch.sarah@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Monday, December 09, 2013 10:07 AM
To: Kerry DeGregorio
Subject: Re: West Lake briefing

Hi Kerry,

The discussion points are in a document in your appt.

From: DeGregorio, Kerry (Blunt) <Kerry_DeGregorio@blunt.senate.gov>
Sent: Monday, December 09, 2013 10:05:17 AM
To: Sanders, LaTonya
Subject: West Lake briefing

I missed the briefing. Just got the notice. Can you forward to me what was discussed?

Kerry J. DeGregorio
U.S. Senator Roy Blunt
St. Louis District Office
7700 Bonhomme Ave
Clayton MO 63105
Ph: 314-725-4484
Fax: 314-727-3548



Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, December 10, 2013 8:54 AM
To: Downey Palmer
Subject: Fw: West Lake Landfill
Attachments: Karl Brooks Letter.pdf; Koster Ltr-Westlake 11-29-2013.pdf; Elected Official Briefing -- West Lake Preliminary Draft GCPT Field Screening -- 12 09 13.pdf

Importance: High

From: Surber, Nancy
Sent: Tuesday, December 10, 2013 8:52:43 AM
To: Sanders, LaTonya
Subject: West Lake Landfill

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Wednesday, December 11, 2013 8:19 AM
To: Palmer, Downey (Blunt)
Subject: RE: West Lake

Hi Downey,

Ron Hammerschmidt, who is on Karl's executive team for West Lake, will call you today.

Thanks.

-----Original Message-----

From: Sanders, LaTonya
Sent: Tuesday, December 10, 2013 8:36 AM
To: Palmer, Downey (Blunt)
Subject: Re: West Lake

The regional administrator gave the briefing. I'm on the road but will check back at the office to see if I can get someone to call you back.

Also, the attachments were in the appt.

I will send them to you again.

From: Palmer, Downey (Blunt) <Downey.Palmer@blunt.senate.gov>
Sent: Tuesday, December 10, 2013 8:29:27 AM
To: Sanders, LaTonya
Subject: RE: West Lake

I got no attachment. Is someone not able to just relay what was said on the phone? I assume the call was about the below issue?

St. Louis Post-Dispatch: More radioactive waste found at Bridgeton landfill Margaret Gillerman December 10, 2013

http://www.stltoday.com/news/local/govt-and-politics/more-radioactive-waste-found-at-bridgeton-landfill/article_370a9595-daa9-5efa-84ac-3950739e2d39.html

FLORISSANT * Additional radioactive material has been discovered at a Bridgeton landfill, according to Florissant City Engineer Tim Barrett.

In a letter to Florissant Mayor Thomas Schneider, who had requested an update, Barrett said that he spoke with someone from the state Department of Natural Resources on Monday afternoon about the additional radioactive waste at the West Lake Landfill. He said a report was expected to be released by the U.S. Environmental Protection Agency later this week on the new findings.

The radioactive material was discovered during exploratory work for construction of a cutoff trench to separate the known radioactive waste from an underground fire smoldering in the South Quarry of the adjacent Bridgeton Landfill.

Depending on the location and results of additional sampling, Barrett wrote, "the new findings will impact where and how it (the trench) is built."

"Going in all parties knew there was a chance that some additional radioactive materials may be encountered, and it appears that they did indeed find it," Barrett wrote.

He wrote that the temperature and gas conditions were still lower than the level to require a trench. However, he wrote, "Republic Services (landfill owner) decided to forgo watching for the 'trigger' levels and go ahead and build the trench rather than sit and wait."

State Rep. Keith English, D-Florissant, who has been actively monitoring the landfill, said: "For many years, cities like Florissant have wanted these tests done."

He credited a lawsuit filed by the state attorney general for prompting the landfill testing.

English has introduced a resolution in the Missouri House calling on Congress to transfer authority over the radioactive waste cleanup from the EPA to the Army Corps of Engineers' Formerly Utilized Sites Remedial Action Program. About 65 state legislators have signed it, he said.

"I would only hope that Congress will act on our state resolution and give power to the Army Corps of Engineers," he said.

Mayor Schneider said that because of potential contamination of the Missouri River from the waste, "the whole St. Louis area will be affected in the long run if we don't do the right thing" regarding the cleanup.

-----Original Message-----

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]

Sent: Tuesday, December 10, 2013 9:27 AM

To: Palmer, Downey (Blunt)

Subject: West Lake

Hi Downey,

I received your vmm. Did you have specific questions about the update?

Also, did you receive the summary attachments?

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, December 19, 2013 9:47 AM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

The January 9 meeting is not an EPA public meeting. From what I understand it's the "Facebook group's" meeting or the "larger West Lake group."

The next EPA public meeting will be held in February, date and location TBD.

I plan to attend that meeting.

I hope you and your family have a wonderful holiday season!

--LaTonya

From: Middleton, Joeana (McCaskill) [mailto:Joeana_Middleton@mccaskill.senate.gov]
Sent: Wednesday, December 18, 2013 10:23 AM
To: Sanders, LaTonya
Subject: RE: Rescheduled West Lake Community Meeting

Hi LaTonya—I'm sorry I missed you at the last CAG meeting this week. Perhaps you'll be at the West Lake Public Meeting? Karl announced that the next public meeting would occur January 9, 2014? Is this date correct? If so, where will the meeting be located?

Thank you,
Jo

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]
Sent: Thursday, December 05, 2013 10:33 AM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

I had a wonderful Thanksgiving holiday, I hope yours was as well.

We didn't have a public meeting scheduled for West Lake in October.

Our plan is to hold a public meeting in January.

We're in the final review process of the groundwater data from July.

We're also discussing meeting logistics and format.

I hope to have a firm date to you soon.

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

From: Middleton, Joeana (McCaskill) [mailto:Joeana_Middleton@mccaskill.senate.gov]
Sent: Wednesday, December 04, 2013 9:56 AM
To: Sanders, LaTonya
Subject: Rescheduled West Lake Community Meeting

Hi LaTonya,

I hope you had a nice Thanksgiving holiday.

I'm writing to find out if there's any updated information regarding the West Lake public meeting that would have taken place last month, I assume, if the shutdown hadn't occurred. Is there any news on that front?

Thanks,
Jo

Joeana L. Middleton
Regional Director
Office of U.S. Senator Claire McCaskill

5850 Delmar Boulevard, Suite A
Saint Louis, MO 63112
Phone: (314) 367-1364
Fax: (314) 361-8649
joeana_middleton@mccaskill.senate.gov

CONNECT with CLAIRE at MCCASKILL.SENATE.GOV



Sanders, LaTonya

Subject: West Lake Landfill Update for Congressional Staff

Start: Wed 1/8/2014 1:00 PM

End: Wed 1/8/2014 1:30 PM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Sanders, LaTonya

Required Attendees: Brecht Mulvihill; Brendan Fahey; Downey Palmer; Edwilla Massey; Erik Rust; Joeana Middleton; John Scates; Kerry DeGregorio; Lou Aboussie; Mark Fowler; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Patrick Bond; Pauline Jamry; Steven Engelhardt; Tod Martin

Conference Number: 866-299-3188

Access Code: 9135517444

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, January 09, 2014 11:13 AM
To: DeGregorio, Kerry (Blunt)
Subject: RE: Map of West Lake/Bridgeton Landfill

Hi Kerry,

Here you go:

http://www.epa.gov/region07/cleanup/west_lake_landfill/index.htm

Then click on "Map of Sampling Locations.PDF"

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Thursday, January 09, 2014 9:20 AM
To: Sanders, LaTonya
Subject: Map of West Lake/Bridgeton Landfill

I need a large map of the Landfill. Can you provide that for me?

Kerry J. DeGregorio
U.S. Senator Roy Blunt
St. Louis District Office
7700 Bonhomme Ave
Clayton MO 63105
Ph: 314-725-4484
Fax: 314-727-3548



Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, January 16, 2014 9:27 AM
To: DeGregorio, Kerry (Blunt)
Subject: RE: West Lake Tour 23 Jan (not for public release)

Hi Kerry,

o.k., we will contact Republic.

Also, please provide details of what points Sen. Blunt would like for his briefing and anything specifically discussed/pointed out during the tour.

Thanks.

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Thursday, January 16, 2014 8:44 AM
To: Sanders, LaTonya
Subject: RE: West Lake Tour 23 Jan (not for public release)

LaTonya,
Yes that is the request. We don't have the appropriate contacts.
Kerry

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]
Sent: Wednesday, January 15, 2014 4:43 PM
To: DeGregorio, Kerry (Blunt)
Subject: RE: West Lake Tour 23 Jan (not for public release)

Hi Kerry,

Are you asking EPA to contact Republic to make them aware of Sen. Blunt's request for a tour and a rep to join us?

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Wednesday, January 15, 2014 10:27 AM
To: Brooks, Karl
Cc: Sanders, LaTonya
Subject: RE: West Lake Tour 23 Jan (not for public release)

Dear Karl,

Thank you for the email. I am sure Mark Hague will do a great job.

I have contacted Mo DNR and requested that they provide a representative for the tour. Aaron Schmidt will be on site that day. I will receive a confirmation from the Director's office tomorrow who will attend. I will forward that information to LaTonya at that time.

I don't have a contact for Republic. Could EPA request a representative from Republic to be on the tour? We would continue to request "no press" as this is a fact finding tour for the Senator.

The Senator is well informed on the Bridgeton/West Lake Landfill issues. I will have a better idea in the next couple of days of any specific briefing requests.

Ms. Downey Palmer, Counsel/Legislative Assistant for the Senator in his D.C. office and myself will be accompanying the Senator.

If your office has additional questions feel free to contact me.

Kerry J. DeGregorio
U.S. Senator Roy Blunt
St. Louis District Office
7700 Bonhomme Ave
Clayton MO 63105
Ph: 314-725-4484
Fax: 314-727-3548



From: Brooks, Karl [<mailto:brooks.karl@epa.gov>]
Sent: Wednesday, January 15, 2014 10:04 AM
To: DeGregorio, Kerry (Blunt)
Cc: Sanders, LaTonya; Hague, Mark
Subject: West Lake Tour 23 Jan

Hi Kerry,

I appreciate the Senator's understanding in my having our Region 7 senior career manager, Mark Hague, lead the EPA team for this tour. If I hadn't invited all the key utilities' regulatory leaders to meet with NGOs at Region 7 to discuss collaborative approaches to climate and the utility sector, I'd have been delighted to spend time with the Senator. As ever, if you or Senator Blunt have questions or comments about EPA's work at West Lake, and with the MDNR at Bridgeton, feel free to contact me or LaTonya.

Should the Senator or staff want to meet to discuss West Lake or any other Missouri project during one of my Washington visits, please let me know.

Cheers,

Karl Brooks
Regional Administrator
EPA Region 7
913-551-7006

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Friday, January 17, 2014 10:38 AM
To: DeGregorio, Kerry (Blunt)
Subject: Bio's for Tour

Mark Hague, Deputy Regional Administrator

Mark Hague serves as the Deputy Regional Administrator for Region 7. In this position, he shares responsibility with the Regional Administrator to manage EPA programs in Iowa, Kansas, Missouri and Nebraska . Mark has over 30 years of experience with EPA, He has served Region 7 in a variety of leadership roles which have included Director of the Enforcement Coordination Office, as well as Acting Assistant Regional Administrator for Policy and Management. Mark graduated from Northwest Missouri State University in May of 1980 with a degree in Political Science/Public Administration.

Jeff Field, Chief Missouri/Kansas Remedial Branch Superfund Division

Jeff Field began his career at EPA Region 7 in 1995 in the Drinking Water/Groundwater Management Branch, Jeff assisted in developing groundwater flows models to assist in groundwater sampling activities, In 1998, he became the Superfund Coordinator/Project Manager coordinating Superfund removal and remedial activities with the Public Water Supply Supervision, Underground Injection Control, Source Water Protection, and Wellhead Protection Programs. In 2006, he moved to the Superfund Division and served in the Missouri/Kansas Remedial Branch as a Remedial Project Manager. In October 2013 Jeff was selected as Chief of the Missouri/Kansas Remedial Branch. He graduated, with departmental honors from the University of Missouri-Kansas City with a Bachelor of Science Degree in Earth Sciences and a minor in Environmental Geology. Jeff is a veteran of the United States Marine Corps.

Dan Gravatt Site Project Manager

Dan Gravatt earned a Bachelor's degree in geology from the University of Rochester in 1994, and a Master's degree in geochemistry from Cornell University in 1996. He is a licensed Professional Geologist in the state of Kansas. His work in the environmental field began in 1999 at the Kansas Department of Health and Environment, where he oversaw investigations and cleanups of contaminated sites, including commercial, former military, and active military facilities. He was hired by EPA Region 7 in 2004 for the Resource Conservation and Recovery Act (RCRA) Corrective Action program, doing the same type of work under EPA authority. He has worked in EPA's Superfund program as a Remedial Project Manager since 2009, continuing his career of environmental investigation and cleanup work under that statute.

Kevin Larson On-Scene Coordinator

Born and raised in Sioux Falls, South Dakota. I graduated from South Dakota State University with a Bachelor of Science degree in Civil Engineering in 1982. I started my Federal career with the U.S. Army Corps of Engineers, New Orleans District in June 1982. Was part of the New Orleans Area Office and oversaw the construction of levees and floodwalls and also was Deputy Sector commander during Mississippi River flood fight operations. In 1988 I transferred to the Kansas District of the Corps of Engineers and worked on the clean-up of environmental contamination of two Strategic Air Command bases in the State of New York, Griffiss AFB, Rome, NY and Plattsburg AFB, Plattsburg, NY.

In 1992 I started work with the U.S. Environmental Protection Agency in the State Programs Section of the RCRA program. In 1995, I became an On-Scene Coordinator (OSC) in the Superfund program. As an OSC I have completed

numerous removal action clean ups and was sent to the Capitol Anthrax clean-up in 2001, lead EPA dive recovery operations for the Columbia Shuttle disaster in 2003, was supervisor for Plaquemines Parish environmental clean-up following Hurricane Katrina in 2005, was part of the response team for the Iowa floods in 2007 and was part of the response team for the Greensburg, Kansas and Joplin, Missouri tornados. My time away from work has been spent being active in the Shriners, currently I am Potentate of Abdallah Shrine, Overland Park, Kansas.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, January 21, 2014 11:53 AM
Subject: EPA Letter to Missouri Attorney General
Attachments: AG Koster Response 011714.pdf

FYI...

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

JAN 17 2014

OFFICE OF THE
REGIONAL ADMINISTRATOR

The Honorable Chris Koster
Attorney General of Missouri
P.O. Box 899
Jefferson City, Missouri 65102

Dear Mr. Koster:

Your letter of January 8, 2014, gives me the opportunity to reaffirm the U.S. Environmental Protection Agency's commitment to addressing the conditions you described at the Bridgeton and West Lake Landfills as promptly as possible. We agree the state of Missouri and the EPA should keep each other well informed, and that our agencies' commitment to protecting public health and the environment requires frequently sharing updates with the public. The information below serves both goals.

The EPA has been fully engaged in overseeing the work that Republic Services is performing to identify the best location for the proposed subsurface isolation barrier. Region 7 staff have been at the site during all field work and this agency continues to review and comment on work plans. The EPA and the State have understood that a prerequisite to constructing an isolation barrier is to test the soils to identify its appropriate location. Gas cone penetrometer testing performed by Republic indicated radiologically impacted material in areas not previously identified. This finding requires further testing, which is consistent with the Missouri Department of Natural Resources' July 24, 2013, letter to Republic. MDNR specified that "no portion of the isolation barrier required to be installed in Part 2 of the Plan may be implemented until an evaluation of the barrier's final location is approved by the department and the U.S. Environmental Protection Agency." That letter further states: "To determine the presence or absence of any radiologically impacted material within the proposed excavation lines, the plan must incorporate sufficient sampling/monitoring to ensure identification of such radiologically impacted material and must include a waste characterization component, i.e. types of waste present and quantities." The EPA is committed to collecting the necessary information to make these determinations. The EPA will continue to require Republic to accelerate its work schedule as long as this agency obtains the required information.

The EPA appreciates the public interest in a schedule for completing the comprehensive radiological survey and constructing the isolation barrier. However, a definitive schedule for these events cannot be provided until the EPA, with state participation, resolves these issues: sampling for undiscovered radiologically impacted material, the specific barrier technology to be used and its specific alignment along the edge of the North Quarry Landfill cell. Setting an arbitrary schedule and attempting to force the isolation barrier project to adhere to that schedule in the face of these uncertainties could compromise the integrity of the information required to install the barrier safely and effectively. I assure you, as I regularly do the public and their elected representatives, that this agency will continue to do its work at West Lake as promptly and prudently as possible.



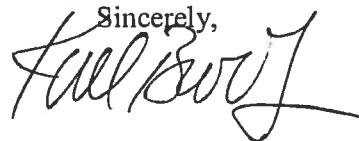
Printed on Recycled Paper

Your January 8 letter asked the EPA to make public its contingency plan “in the event that the construction of the isolation barrier becomes infeasible.” Installation of the subsurface barrier is itself the contingency plan required by your order with Republic. MDNR’s September 18, 2013, comments to the EPA on the draft North Quarry Contingency Plan – Part 2 noted: “The intent of this comment was to state that regardless of the results of the GCPT investigation, a location for the isolation barrier must be chosen that separates Operable Unit 1, Area 1 from the Bridgeton Sanitary Landfill North Quarry.” The EPA will continue to oversee work by Republic to find such a location for the isolation barrier.

Your letter makes the important point that the EPA Region 7, MDNR and your office need to keep each other fully informed about this important and complex project. Once the isolation barrier location is chosen, the EPA must cooperate closely with your office and MDNR to ensure that construction of the isolation barrier meets Republic’s obligations under both the State and the EPA’s orders.

I appreciate your office’s efforts to protect the health and safety of Missourians concerned about the subsurface smoldering event at the Bridgeton Landfill, as well as your excellent questions about the EPA’s efforts to site and construct an isolation barrier between Bridgeton Landfill and the West Lake Landfill.

Thank you for your letter. Please feel free to contact me at (913) 551-7006.

Sincerely,

Karl Brooks

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, January 21, 2014 12:02 PM
To: DeGregorio, Kerry (Blunt)
Subject: RE: Agenda for Tour

Agenda:

1:15PM Senator Blunt arrives at Bridgeton Residential/West Lake Landfill (Enter at ??? Main Republic Services Office location, 12976 St. Charles Rock Road). He will be met by ??? EPA, MDNR and Republic Services representatives.

1:20 – 1:45PM Receive orientation briefing on the site, put on appropriate safety gear, and depart main Office entrance, board vehicles and begin tour ??? of the landfill (Will he be in a car or walking?)

1:45 – 2:00PM Tour will continue to the ?????? overlook area between the Bridgeton Sanitary Landfill and the Operable Unit 1, Area 1 cell.

2:00 – 2:20PM Tour will continue?? to other locations at the landfill if requested by the Senator, or spend additional time viewing the work from the overlook area and answering questions. Or will they meet and discuss any items in a meeting room??

2:20 – 2:30PM Wrap up meeting and return to ??? Main Republic Services Office for departure.

2:30PM Depart West Lake Landfill.

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Tuesday, January 21, 2014 11:41 AM
To: Sanders, LaTonya
Subject: Agenda for Tour

LaTonya,
Can you provide the following agenda information. I need to send this to DC later today if possible.

Agenda:

1:15PM Senator Blunt arrives at Bridgeton Residential/West Lake Landfill (Enter at ??? location). He will be met by ???.

1:20 – 1:45PM Depart main entrance and begin tour ??? (Will he be in a car or walking?)

1:45 – 2:00PM Tour will continue to the ?????? area.

2:00 – 2:20PM Tour will continue?? Or will they meet and discuss any items in a meeting room??

2:20 – 2:30PM Wrap up meeting and return to ??? for departure.

2:30PM Depart West Lake Landfill.

I appreciate your assistance.

Kerry J. DeGregorio
U.S. Senator Roy Blunt
St. Louis District Office
7700 Bonhomme Ave
Clayton MO 63105
Ph: 314-725-4484
Fax: 314-727-3548



Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, January 21, 2014 2:13 PM
To: DeGregorio, Kerry (Blunt)
Subject: RE: Bio's for Tour

Yes, everyone has been told.

Thanks.

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Tuesday, January 21, 2014 1:58 PM
To: Sanders, LaTonya
Subject: RE: Bio's for Tour

Thank you LaTonya.

Could you remind those attending this is a not for public release event. Thanks.

From: Sanders, LaTonya [mailto:Sanders.Latonya@epa.gov]
Sent: Tuesday, January 21, 2014 1:57 PM
To: DeGregorio, Kerry (Blunt)
Subject: RE: Bio's for Tour

Republic:

The planned participants from our team are: Joe Benco, the Vice President of Engineering; Tim Trost, the Area President; Victoria Warren, the Director of Superfund; and Brian Power, the Bridgeton Landfill Environmental Manager, will join if his earlier agency meeting adjourns in time. In addition, we have asked the West Lake Project Manager, Paul Rosasco, to participate.

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Monday, January 20, 2014 4:51 PM
To: Sanders, LaTonya
Subject: RE: Bio's for Tour

LaTonya,
Thank you for the information.

Do we know who will join us from Republic?

Chris Nagel and Aaron Schmidt will be with us from Mo DNR.

From: Sanders, LaTonya [mailto:Sanders.Latonya@epa.gov]
Sent: Friday, January 17, 2014 10:38 AM
To: DeGregorio, Kerry (Blunt)
Subject: Bio's for Tour

Mark Hague, Deputy Regional Administrator

Mark Hague serves as the Deputy Regional Administrator for Region 7. In this position, he shares responsibility with the Regional Administrator to manage EPA programs in Iowa, Kansas, Missouri and Nebraska . Mark has over 30 years of experience with EPA, He has served Region 7 in a variety of leadership roles which have included Director of the Enforcement Coordination Office, as well as Acting Assistant Regional Administrator for Policy and Management. Mark graduated from Northwest Missouri State University in May of 1980 with a degree in Political Science/Public Administration.

Jeff Field, Chief
Missouri/Kansas Remedial Branch
Superfund Division

Jeff Field began his career at EPA Region 7 in 1995 in the Drinking Water/Groundwater Management Branch, Jeff assisted in developing groundwater flows models to assist in groundwater sampling activities, In 1998, he became the Superfund Coordinator/Project Manager coordinating Superfund removal and remedial activities with the Public Water Supply Supervision, Underground Injection Control, Source Water Protection, and Wellhead Protection Programs. In 2006, he moved to the Superfund Division and served in the Missouri/Kansas Remedial Branch as a Remedial Project Manager. In October 2013 Jeff was selected as Chief of the Missouri/Kansas Remedial Branch. He graduated, with departmental honors from the University of Missouri-Kansas City with a Bachelor of Science Degree in Earth Sciences and a minor in Environmental Geology. Jeff is a veteran of the United States Marine Corps.

Dan Gravatt
Site Project Manager

Dan Gravatt earned a Bachelor's degree in geology from the University of Rochester in 1994, and a Master's degree in geochemistry from Cornell University in 1996. He is a licensed Professional Geologist in the state of Kansas. His work in the environmental field began in 1999 at the Kansas Department of Health and Environment, where he oversaw investigations and cleanups of contaminated sites, including commercial, former military, and active military facilities. He was hired by EPA Region 7 in 2004 for the Resource Conservation and Recovery Act (RCRA) Corrective Action program, doing the same type of work under EPA authority. He has worked in EPA's Superfund program as a Remedial Project Manager since 2009, continuing his career of environmental investigation and cleanup work under that statute.

Kevin Larson
On-Scene Coordinator

Born and raised in Sioux Falls, South Dakota. I graduated from South Dakota State University with a Bachelor of Science degree in Civil Engineering in 1982. I started my Federal career with the U.S. Army Corps of Engineers, New Orleans District in June 1982. Was part of the New Orleans Area Office and oversaw the construction of levees and floodwalls and also was Deputy Sector commander during Mississippi River flood fight operations. In 1988 I transferred to the Kansas District of the Corps of Engineers and worked on the clean-up of environmental contamination of two Strategic Air Command bases in the State of New York, Griffiss AFB, Rome, NY and Plattsburg AFB, Plattsburg, NY.

In 1992 I started work with the U.S. Environmental Protection Agency in the State Programs Section of the RCRA program. In 1995, I became an On-Scene Coordinator (OSC) in the Superfund program. As an OSC I have completed numerous removal action clean ups and was sent to the Capitol Anthrax clean-up in 2001, lead EPA dive recovery operations for the Columbia Shuttle disaster in 2003, was supervisor for Plaquemines Parish environmental clean-up following Hurricane Katrina in 2005, was part of the response team for the Iowa floods in 2007 and was part of the response team for the Greensburg, Kansas and Joplin, Missouri tornados. My time away from work has been spent being active in the Shriners, currently I am Potentate of Abdallah Shrine, Overland Park, Kansas.

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, January 21, 2014 4:40 PM
To: DeGregorio, Kerry (Blunt)
Subject: RE: contact

Yes.

From: DeGregorio, Kerry (Blunt) [mailto:Kerry_DeGregorio@blunt.senate.gov]
Sent: Tuesday, January 21, 2014 4:24 PM
To: Sanders, LaTonya
Subject: contact

Could you be our contact for 1 pm on Thursday? This is in case there is a problem locating the staff.

Kerry J. DeGregorio
U.S. Senator Roy Blunt
St. Louis District Office
7700 Bonhomme Ave
Clayton MO 63105
Ph: 314-725-4484
Fax: 314-727-3548



Sanders, LaTonya

From: Sanders, LaTonya
Sent: Wednesday, January 22, 2014 1:40 PM
To: DeGregorio, Kerry (Blunt)
Subject: West Lake Pics
Attachments: 131101-EPA-Bridgeton-001.jpg; 131101-EPA-Bridgeton-002.jpg; 131101-EPA-Bridgeton-004.jpg; 131101-EPA-Bridgeton-005.jpg; 131101-EPA-West Lake - 008.jpg; 131101-EPA-West Lake Landfill-001.jpg; 131101-EPA-West lake landfill-003.jpg; 131101-EPA-West Lake-009.jpg; 131101-EPA-Westlake Landfill-002.jpg; 131105-EPA-West Lake-(2).jpg; 131105-EPA-West Lake-(3).jpg; 131105-EPA-West Lake-(4).jpg; 131105-EPA-West Lake-001.jpg; 131105-EPA-West Lake-003.jpg

Hi Kerry,

Attached are some pics to share with Sen. Blunt that show some of the work being done at West Lake/Bridgeton.

We'll have hard copies in Sen. Blunt's briefing folder.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



Representatives of Feezor Engineering, Inc. (FEI), conduct a site briefing at the start of the day's work at the West Lake Landfill Site in Bridgeton, Mo., Oct. 29, 2013. EPA Region 7 is providing daily oversight of an engineering survey conducted by FEI prior to the construction of an isolation barrier between West Lake Landfill and the Bridgeton Sanitary Landfill. The survey, which will involve Gamma Cone Penetrometer Testing (GCPT) and core sampling, will identify any radiologically-impacted material that may be present, and will ensure the area is suitable for construction of the barrier. Daily site briefings will focus on the scope of work, equipment and staffing, weather, site safety, regulatory concerns, and other issues as needed. The briefings are attended by representatives from EPA, the Missouri Department of Natural Resources, and all of the potentially responsible parties' subcontractors. The survey is expected to be complete by late December 2013. (U.S. EPA Region 7 photo)



Contractors overseen by EPA Region 7 staff monitor preliminary data onboard a track-driven Gamma Cone Penetrometer Testing (GCPT) unit as they screen for radiologically-impacted material below the surface of the West Lake Landfill Site in Bridgeton, Mo., Nov. 15, 2013. The GCPT phase of an engineering study, designed to determine the appropriate placement of an isolation barrier at the site, is expected to be completed by the end of November. The final phase of the engineering study, involving core sampling at various locations on the site, is expected to be complete by the end of 2013. (U.S. EPA photo)



Contractors overseen by EPA Region 7 staff gather a core sample brought to the surface of a survey area at the West Lake Landfill Site in Bridgeton, Mo., Jan. 14, 2014. The samples are encased in protective plastic sheathing and are handled by contractors wearing protective equipment and radiation monitors, all in accordance with a health and safety plan for the project. EPA estimates contractors will be working at the site to collect and screen the coring samples for radiation through late February or early March. Data from the project will be shared with the public as soon as it completes a quality assurance process. (U.S. EPA photo)



A representative of Feezor Engineering, Inc. (FEI) displays radiation detection meters at the West Lake Landfill Site in Bridgeton, Mo., Oct. 29, 2013. The meters will be used to conduct measurements on the site as areas are sampled and cleared for Gamma Cone Penetrometer Testing (GCPT). The instruments have all been calibrated and are ready for use. Among the models shown are (far left) a 3"x3" sodium iodide probe attached to a Model 2411 meter, and (far right) a Ludlum Model 192 microR meter. (U.S. EPA Region 7 photo)



Overseen by EPA Region 7 staff, a contractor conducts a field screening test of a core sample removed from below the surface of the West Lake Landfill Site in Bridgeton, Mo., Jan. 14, 2014. Encased in a protective plastic sheath, the sample is checked for radiation at six-inch intervals, and will be stored in a protective containment structure at the site, in accordance with an EPA-approved health and safety plan. The coring and sampling activity is expected to continue through late February or early March in an area of the landfill being surveyed for future construction of an isolation barrier. (U.S. EPA photo)



Contractors conduct vegetation clearing, GPS and gamma radiation surveying on October 30, 2013, prior to placement of the gravel and pad at the main entrance alignment and equipment storage areas of a survey operation at the West Lake Landfill Site in Bridgeton, Mo. Working under the oversight of EPA Region 7, crews are clearing paths and building a system of limited, temporary roads through a portion of Operable Unit 1 at the Superfund site to enable survey equipment to enter the area. (U.S. EPA Region 7 photo)



Contractors overseen by EPA Region 7 staff use a self-propelled track-driven unit to perform Gamma Cone Penetrometer Testing (GCPT) at the West Lake Landfill Site in Bridgeton, Mo., Nov. 13, 2013. The GCPT unit will be used at multiple locations to identify any radiologically-impacted material that may be present beneath the surface and ensure the area is suitable for future construction of an isolation barrier. (U.S. EPA photo)



Contractors overseen by EPA Region 7 staff position a geoprobe drilling unit to take a core sample of subsurface material at the West Lake Landfill Site in Bridgeton, Mo., Jan. 14, 2014. The drill rig is pushed into the ground, and sample cores will be collected from the surface down to 100 feet in some areas. The samples will be screened at the site for radiation and possibly sent off-site to labs for further testing. All sample cores are being handled in accordance with an approved health and safety plan to minimize exposures, and are being stored in a mobile containment structure at the site until they can be disposed of. The coring and sampling activity is part of an engineering survey whose purpose is to locate radiologically-impacted material beneath the landfill's surface and ensure that a targeted area is suitable for future construction of an isolation barrier. (U.S. EPA photo)



Gravel is transferred on top of a geotextile fabric that will serve as the foundation of a system of limited, temporary roads through a portion of Operable Unit 1 at the West Lake Landfill Site in Bridgeton, Mo., October 30, 2013. In this photo the large track-driven bucket loader stays outside the fence of the survey area, allowing final placement of the gravel along the roads by a smaller track-driven front-end loader. (U.S. EPA Region 7 photo)



Contractors overseen by EPA Region 7 staff monitor the hydraulic driven probe mechanism inside the Gamma Cone Penetrometer Testing (GCPT) unit during an engineering survey at the West Lake Landfill Site, Nov. 13, 2013. The probe drives sections of metal rod into the surface of the ground. A cable connected to sensors in the tip of the rod runs up through sections of the rod to a computer in the cab of the GCPT unit, allowing contractors to see preliminary data as areas below the surface of the landfill are surveyed for radiologically-impacted material. (U.S. EPA photo)



Contractors overseen by EPA Region 7 staff monitor preliminary data onboard a track-driven Gamma Cone Penetrometer Testing (GCPT) unit as they screen for radiologically-impacted material below the surface of the West Lake Landfill Site in Bridgeton, Mo., Nov. 15, 2013. Data gathered from multiple surface probes will be compiled and used to determine the appropriate placement of an isolation barrier at the site. (U.S. EPA photo)



This photo, taken on October 30, 2013, from atop the North Quarry Landfill Cell at the West Lake Landfill Site in Bridgeton, Mo., shows jobsite and road construction progress for an engineering survey project that is expected to be complete by late December 2013. The survey will identify any radiologically-impacted material that may be present in an area of Operable Unit 1 beyond the fence in this photo, and ensure the area is suitable for future construction of an isolation barrier between West Lake and Bridgeton Sanitary Landfill.
(U.S. EPA Region 7 photo)



Contractor Mike Bollenbacher, in foreground, and a colleague use handheld equipment to scan for radiation at the surface of Operable Unit 1 at the West Lake Landfill Site in Bridgeton, Mo., October 30, 2013. EPA Region 7 is overseeing an engineering survey to identify any radiologically-impacted material that may be present and ensure the area is suitable for future construction of an isolation barrier between West Lake and Bridgeton Sanitary Landfills. (U.S. EPA Region 7 photo)



Under oversight by EPA Region 7 representatives, a contractor uses a brush hog attachment to clear small shrubs, trees, grasses and other low-lying vegetation at the West Lake Landfill Site in Bridgeton, Mo., Oct. 29, 2013. A path is being built through the site so that Ground Cone Penetrometer Testing (GCPT) can be conducted. When this photo was taken on October 29, wind was around 5 mph and the vegetation was damp from dew. There were no visible dust emissions observed during the operation. (U.S. EPA Region 7 photo)

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Monday, January 27, 2014 8:47 AM
To: DeGregorio, Kerry (Blunt)
Subject: FW: Question on attendees for the Blunt visit last week

Good Morning Kerry,

See below.

From: Gravatt, Dan
Sent: Monday, January 27, 2014 8:45 AM
To: Sanders, LaTonya
Cc: Field, Jeff
Subject: FW: Question on attendees for the Blunt visit last week

FYI, see the information from Republic below.

Daniel R. Gravatt, PG
US EPA Region 7 SUPR/MOKS
11201 Renner Boulevard, Lenexa, KS 66219
Phone (913) 551-7324

Principles and integrity are expensive, but they are among the very few things worth having.

From: Warren, Victoria [<mailto:VWarren@republicservices.com>]
Sent: Monday, January 27, 2014 8:18 AM
To: Gravatt, Dan
Subject: [POSSIBLE SPAM] RE: Question on attendees for the Blunt visit last week

Yes, his name is Russ Knocke. Do you need contact information?
vw

From: Gravatt, Dan [<mailto:Gravatt.Dan@epa.gov>]
Sent: Monday, January 27, 2014 9:07 AM
To: Warren, Victoria
Subject: Question on attendees for the Blunt visit last week
Importance: High

Victoria, see below the question from Blunt's office relayed through our Office of Public Affairs. They may be referring to the fellow who sat in the corner with a laptop and did not introduce himself as we went around the room. But, if you had other PR people there, please provide their names as well.

Thanks,
Daniel R. Gravatt, PG
US EPA Region 7 SUPR/MOKS
11201 Renner Boulevard, Lenexa, KS 66219
Phone (913) 551-7324

Principles and integrity are expensive, but they are among the very few things worth having.

From: Sanders, LaTonya

Sent: Monday, January 27, 2014 7:48 AM

To: Field, Jeff; Gravatt, Dan; Larson, Kevin

Subject: Good Morning, do we know the name of Republic's PR person who attended the briefing and tour? Sen. Blunt's office would like to know. Thanks.

Importance: High

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Monday, February 03, 2014 2:10 PM
To: DeGregorio, Kerry (Blunt); downey_palmer@blunt.senate.gov
Subject: Follow-up from West Lake Landfill Tour for Sen. Roy Blunt
Attachments: Scanned from a Xerox multifunction device.pdf

Importance: High

Hi Kerry and Downey,

Attached is a follow-up letter to Sen. Blunt from the West Lake Landfill tour.

The original has been mailed.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

FEB 03 2014

OFFICE OF THE
REGIONAL ADMINISTRATOR

The Honorable Roy Blunt
United States Senate
Washington, DC 20510

Dear Senator Blunt:

Thank you for the opportunity on January 23, 2014, for the U.S. Environmental Protection Agency, Region 7 to update you and your staff on our ongoing work at the Westlake Landfill Superfund site. It was helpful to have representatives from the Missouri Department of Natural Resources participate and be able to address concerns with the subsurface smoldering event at the Bridgeton Landfill as well as having present, the operator of the site, Republic Services.

During the course of the meeting you made several requests for follow-up information on specific subjects. The follow-up information consists of; Table ES-1, that was developed by Republic Services, and contains information found in the complete Supplemental Feasibility Study; Table 10 is taken directly from the EPA approved Supplemental Feasibility Study developed by Republic Services under Agency oversight, and compares remedial action alternatives to the nine criteria the EPA follows in evaluating potential remedies. Also enclosed is a map provided to us by MDNR titled "Public Water System Well: MCL Violations for Combined Radium 226 and Radium 228." The locations depicted on the map indicate MCL exceedences caused by naturally occurring Radium in bedrock wells. Your office may have received this information directly from MDNR. Also, enclosed is a copy of a letter to Sen. Christopher Bond regarding the Earth City Levee.

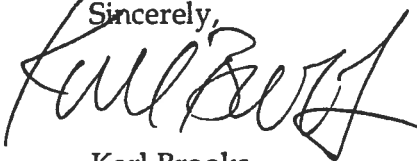
Additionally, you requested that we provide you with information the EPA is developing, to provide insight on a question that has been raised by some concerned interest groups: "What would happen if the subsurface smoldering event in the Bridgeton Landfill were to come in contact with the radiological impacted material at the Westlake site?" That question is currently being evaluated by landfill experts in the EPA's Office of Research and Development, along with information provided to the EPA by Republic Services. Since the SSE is occurring in a landfill under MDNR authority, we continue to cooperate with them on developing a response to that question. We anticipate the EPA will have completed that evaluation near the end of March 2014. Once that work is completed, we will provide your office with a copy.



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We appreciate Kerry DeGregorio's and Downey Palmer's regular participation on the frequent conference calls EPA Region 7 conducts to update elected officials. We will continue to keep your office informed of EPA activities at the Westlake Landfill and our coordinated efforts with MDNR to implement the contingency plans ordered by the State Attorney General to construct an isolation barrier between the SSE in the Bridgeton Landfill and the Westlake Landfill site.

If we can be of any further assistance, please feel free to contact me at 913-551-7006, or your staff may call LaTonya Sanders, Congressional Liaison, at 913-551-7555.

Sincerely,

Karl Brooks

Enclosures

Table ES-1 SUMMARY OF POTENTIAL RISKS, IMPLEMENTATION SCHEDULES AND COSTS WEST LAKE LANDFILL SFS REMEDIAL ALTERNATIVES			
	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" with On-Site Disposal
Long term residual cancer risk 1,000 years after cleanup	1.3×10^{-4} (1.3 extra incidences in 1,000,000 people)	$<1 \times 10^{-7}$ (less than 0.1 extra incidence in 1,000,000 people)	1.5×10^{-4} (1.5 extra incidences in 1,000,000 people)
Short term risks during cleanup	<u>On-Site Workers</u> Industrial accidents: 4.7 Cancer risk: 7.2×10^{-5} (0.72 extra incidences in 10,000 people) Worker dose: 50 mrem/yr	<u>On-Site Workers</u> Industrial accidents: 7.6 Cancer risks: 7.6×10^{-4} (7.6 extra incidences in 10,000 people) Worker dose: 260 mrem/yr	<u>On-Site Workers</u> Industrial accidents: 9.0 Cancer risks: 7.4×10^{-4} (7.4 extra incidences in 10,000 people) Worker dose: 260 mrem/yr
	<u>Community</u> Transportation accidents: 0.61 Cancer risk: 3.3×10^{-4} (0.33 extra incidences in 100,000 people) Carbon dioxide emissions: 8,350 tons	<u>Community</u> Transportation accidents: 1.4 Cancer risks: 2.1×10^{-5} (2.1 extra incidences in 100,000 people) Carbon dioxide emissions: 35,400 tons	<u>Community</u> Transportation accidents: 0.79 Cancer risks: 2.0×10^{-5} (2.0 extra incidences in 100,000 people) Carbon dioxide emissions: 17,900 tons
Schedule to reach cleanup goals	3 years (or 5 years at spend rate of \$10M per year)	4 years (or 29 years at spend rate of \$10M per year)	6 years (or 13 years at spend rate of \$10M per year)
Costs	Capital construction: \$41,400,000 OM&M per year: \$42,000 to \$414,000	Capital construction: \$259,000,000 to \$415,000,000 OM&M per year: \$40,000 to \$412,000	Capital construction: \$117,000,000 OM&M per year: \$52,000 to \$604,000

(Source: Executive Summary of the Supplemental Feasibility Study, Radiological-Impacted Material Excavation Alternatives Analysis, West Lake Landfill Operable Unit-1, December 28, 2011, prepared on behalf of the West Lake Landfill OU-1 Respondents by Engineering Management Support, Inc.)

Table 10: Comparative Analysis of Alternatives

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Threshold Criteria			
Overall Protection of Human Health and the Environment	All of the alternatives would be protective of human health and the environment. All alternatives eliminate or reduce potential exposures to (1) external gamma radiation, (2) radon emissions, (3) inhalation or ingestion of contaminated soil or wastes, (4) dermal contact with contaminated soil or waste, and (5) dispersal of contaminants in fugitive dust. All of the alternatives would reduce potential infiltration of precipitation into the waste and thereby reduce the potential for leaching to groundwater. All alternatives include institutional controls to ensure that only land and resource uses that are consistent with the remedy and protective of human health and the environment are allowed in the future.		
Compliance with ARARs			
Compliance with Chemical-Specific ARARs	All of the alternatives would comply with chemical-specific ARARs including (1) uranium mill tailing standards for radon emissions, maximum concentrations for groundwater protection, and cleanup of contaminated land (Buffer Zone and Crossroad Property), (2) radon NESHAP, (3) Missouri radiation protection standards, and (4) Missouri maximum contaminant levels (MCLs).		
Compliance with Location-Specific ARARs	Would meet location-specific ARARs including solid waste regulation standards relative to 100-year floodplain and proximity to airport runways.	Would meet location-specific ARARs including solid waste regulation standards relative to 100-year floodplain and proximity to airport runways.	Would meet location-specific ARARs including solid waste regulation site selection standards relative to airport runways, 100-year floodplain, wetlands, seismic zones, and unstable ground. May not meet all FAA requirements (TBCs) relative to airport runways because location of on-site cell is within 8,000 feet of end of westernmost runway at Lambert-St. Louis International Airport.
Compliance with Action-Specific ARARs	Would meet action-specific ARARs including Missouri solid waste regulations closure and post-closure standards for longevity of disposal facilities.	Would meet action-specific ARARs including Missouri solid waste regulation closure and post-closure standards, DOT and NRC standards for shipment of radioactive wastes, and disposal facility waste acceptance criteria.	Would meet action-specific ARARs including Missouri solid waste regulations for design, operation, closure and post-closure of a solid waste landfill and uranium mill tailing standards for longevity of disposal facilities. Would NOT comply with Missouri solid waste prohibition on disposal of radioactive contaminated material in solid waste disposal cell.

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria			
Long-Term Effectiveness and Permanence Magnitude of residual risks	Highest long-term risk that would remain upon completion of the remedial action (1.3×10^{-6}) is within EPA's target risk range of 1×10^{-6} to 1×10^{-4} .	Highest long-term risk that would remain upon completion of the remedial action ($< 1 \times 10^{-7}$) is less than EPA's target risk range of 1×10^{-6} to 1×10^{-4} .	Highest long-term risk that would remain upon completion of the remedial action (1.5×10^{-6}) is within EPA's target risk range of 1×10^{-6} to 1×10^{-4} .
Adequacy and reliability of controls	<p>Engineering measures including construction, inspection and maintenance of a final cover would be the primary methods used to control waste materials that remain on site. These types of measures have been demonstrated to be effective at numerous solid waste and NCP sites. Conceptual design of the new landfill covers is based on established designs for solid waste disposal sites, augmented to limit increased gamma radiation and radon emissions expected to occur over a 1,000 period from decay of thorium.</p> <p>Includes rip-rap armor along toe of Area 2 to provide protection against flooding in the unlikely event of failure of the Earth City Flood Control levees or stormwater management systems. Engineering measures would be augmented and supported by existing and additional institutional controls which also have been used at numerous solid waste and NCP sites.</p>	<p>Includes excavation and removal of radiologically-impacted materials above levels which would allow for unrestricted use relative to radiological contamination to an off-site disposal site, and thus is potentially more reliable than the other alternatives. Engineering measures including construction, inspection and maintenance of a final cover would be the primary methods used to control waste materials that remain on site. These types of measures have been demonstrated to be effective at numerous solid waste and NCP sites. Engineering measures would be augmented and supported by existing and additional institutional controls which also have been used at numerous solid waste and NCP sites.</p>	<p>Engineering measures including construction and closure of a new engineered waste disposal cell and construction, inspection and maintenance of a final cover would be the primary methods used to control waste materials that remain on site. These types of measures have been demonstrated to be effective at numerous solid waste and NCP sites. Engineering measures would be augmented and supported by existing and additional institutional controls which also have been used at numerous solid waste and NCP sites. Conceptual design of the new landfill cell is based on established designs for solid waste disposal sites, augmented to limit increased gamma radiation and radon emissions expected to occur over a 1,000 period from decay of thorium.</p>

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Reduction of Toxicity, Mobility or Volume through Treatment	<p>None of the alternatives include treatment technologies that would reduce the toxicity, mobility or volume of waste material through treatment as a primary component. Treatment technologies are generally not applicable to the site wastes due to the nature and overall large volume of wastes, combined with the fact that radionuclides are naturally occurring elements that cannot be neutralized or destroyed by treatment.</p> <p>All of the alternatives include off-site treatment and disposal of hazardous wastes in accordance with the RCRA regulations if any such wastes are encountered during implementation of the remedy.</p>		
Short-Term Effectiveness			
Protection of the community during any remedial action	<p>Lowest potential for impacts to the community:</p> <p>Transportation accident incidence: 0.61 Carcinogenic risk to residents: 3.3×10^{-6} Carbon dioxide emissions: 8,350 tons</p>	<p>Highest potential for impacts to the community:</p> <p>Transportation accident incidence: 1.4×10^{-5} Carcinogenic risk to residents: 2.1×10^{-5} Carbon dioxide emissions: 35,400 tons</p> <p>Excavation of RIM would create depressions in the waste where precipitation could accumulate increasing the potential for infiltration, leaching and creation of a plume of contamination in groundwater.</p>	<p>Lower potential for impacts to the community:</p> <p>Transportation accident incidence: 0.79 Carcinogenic risk to residents: 2.0×10^{-5} Carbon dioxide emissions: 17,900 tons</p> <p>Excavation of RIM would create depressions in the waste where precipitation could accumulate increasing the potential for infiltration, leaching and creation of a plume of contamination in groundwater.</p> <p>This alternative poses greatest potential for increased bird strikes to aviation operations at nearby Lambert-St. Louis International Airport.</p>
Protection of workers during remedial actions	<p>This alternative poses the least potential for increased bird strikes to aviation operations at nearby Lambert-St. Louis International Airport.</p> <p>Lowest potential for impacts to workers</p> <p>Industrial accident incidence – 4.7 Carcinogenic risk – 7.2×10^{-5} Worker dose (TEDE) – 50 mrem/yr</p>	<p>This alternative poses potential for increased bird strikes to aviation operations at nearby Lambert-St. Louis International Airport.</p> <p>Greater potential impacts to workers from increased handling of RIM</p> <p>Industrial accident incidence – 7.6 Carcinogenic risk – 7.6×10^{-4} Worker dose (TEDE) – 260 mrem/yr</p>	<p>Greater potential impacts to workers due to increased handling of RIM</p> <p>Industrial accident incidence – 9.0 Carcinogenic risk – 7.4×10^{-4} Worker dose (TEDE) – 260 mrem/yr</p>
Environmental impacts of any remedial action	<p>No measurable long-term impacts to plants or animals are expected to occur from any of the alternatives. No wetlands are present on-site and no endangered species were identified in the site area. Regrading and/or excavating Area 2 would disturb the landfill surface and destroy the habitat that currently exists in this area, but this would be replaced by vegetative cover equivalent to an early stage field succession.</p>		

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Short-Term Effectiveness (cont.) Time until RAOs are achieved	Implementation of institutional controls is included as part of all of the alternatives and would take approximately 1 year to implement. Potential threats would be addressed upon implementation of institutional controls. No potential threats would remain after implementation of any of the alternatives. Note: NTP for entries below is notice to proceed with RD.		
	RAOs would be achieved upon completion of construction 3 yrs after NTP w/ no fiscal constraint 5 yrs after NTP if fiscal constraint	RAOs would be achieved upon completion of construction 4 yrs after NTP w/ no fiscal constraint 29 yrs after NTP if fiscal constraint	RAOs would be achieved upon completion of construction 6 yrs after NTP w/ no fiscal constraint 13 yrs after NTP if fiscal constraint
Implementability Technical Feasibility	All of the alternatives are constructible.		
		<p>There is uncertainty regarding the actual volumes of RIM that would need to be removed and the volume of daily cover that would be added resulting in uncertainty the actual disposal volume. The ability to remove deeper occurrences of RIM from Area 2 is a technical difficulty with this alternative and might result in schedule delays. The ability to locate a rail spur near the site or to construct a rail spur to and on the site is a technical difficulty that could limit the performance and schedule of this alternative. Reductions in the number of rail cars or the frequency of exchange of full and empty rail cars could impact the schedule for this alternative.</p>	<p>There is uncertainty regarding the actual volumes of RIM that would need to be removed and the volume of daily cover that would be added resulting in uncertainty the actual disposal volume. The ability to remove deeper occurrences of RIM from Area 2 is a technical difficulty with this alternative that might result in schedule delays. Construction and operation of a new engineered disposal cell is a common technology that has been demonstrated to be reliable. Only one possible location for a new disposal cell could be identified due to the Missouri river geomorphic floodplain. Subsurface conditions at this location are unknown and could affect technical feasibility and/or capacity of a new disposal cell.</p>

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Implementability (cont.)			
Technical Feasibility (cont.)	Landfill cover systems have been used extensively and with proper inspection and maintenance have been demonstrated to be reliable. Stormwater controls and environmental monitoring are commonly used techniques that have been demonstrated to be reliable.	Excavation and offsite disposal is a common and reliable technology. Landfill cover systems have been used extensively and with proper inspection and maintenance have been demonstrated to be reliable. Stormwater controls and environmental monitoring are commonly used and demonstrated reliable techniques. Per the FAA, the reliability of most bird mitigation technologies are questionable.	Landfill cover systems have been used extensively and with proper inspection and maintenance have been demonstrated to be reliable. Stormwater controls and environmental monitoring are commonly used and demonstrated reliable techniques. Per the FAA, the reliability of most bird mitigation technologies are questionable.
The only future actions anticipated to be required for all of the alternatives are ongoing inspection, monitoring, maintenance and, if needed, repair of the final landfill covers which should be easily implemented. All of the alternatives include a provision for a contingent landfill gas control system in the event the monitoring of subsurface occurrences of landfill gas or radon indicates a need for such a system. Performance of all the alternatives can be monitored and potential risk of exposure in the event of failure of any of the alternatives would be low.			
Administrative Feasibility	Requires coordination and permitting with MSD for disposal of leachate and stormwater during construction. Requires access to Crossroad Property for investigation/removal of soil. Requires coordination with Earth City Flood Control district for design and operation of long-term stormwater management systems. May require preparation and approval of a traffic control plan for St. Charles Rock Road.	Implementation would require approval and verification of current acceptability for off-site disposal from EPA. Use of the Clean Harbors facility for disposal would require approval by the Rocky Mountain Low Level Radioactive Waste Compact. Construction of a rail spur would require leasing/acquisition of property located on the east side of St. Charles Rock Rd. and permission to construct a rail crossing over St. Charles Rock Rd.	Requires approval of City of St. Louis (unlikely based on prior discussions) to temporarily remove its Negative Easement and Restrictive Covenant against additional landfilling at the site and resultant impacts to airport safety. Requires coordination with and possible approval by the FAA for construction and operation a new disposal cell within 10,000 ft of the end of the westernmost runway at Lambert-St. Louis International Airport.

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Implementability (cont.) Administrative Feasibility (cont.)		Requires coordination and permitting with MSD for disposal of leachate and stormwater during construction. Requires access to Crossroad Property for investigation/removal of soil. Requires coordination with Earth City Flood Control district for design and operation of long-term stormwater management systems. May require development and approval of a traffic control plan for St. Charles Rock Road.	Requires MDNR approval to construct haul roads over previously closed portions of the permitted landfill. Requires coordination and permitting with MSD for disposal of leachate and stormwater during construction. Requires access to Crossroad Property for investigation/removal of soil. Requires coordination with Earth City Flood Control district for design and operation of long-term stormwater management systems. May require preparation and approval of a traffic control plan for St. Charles Rock Road.
		Preliminary discussions with MSD indicate that it is willing and has sufficient capacity to accept leachate or stormwater that may be generated during construction. Alternatively, off-site disposal facilities are available to accept these materials if necessary.	Preliminary discussions with MSD indicate that it is willing and has sufficient capacity to accept leachate or stormwater that may be generated during construction and leachate that may accumulate in the new on-site disposal cell. Alternatively, off-site disposal facilities are available to accept these materials if necessary.
Availability of Services and Materials		Adequate equipment, materials, and specialists necessary to implement this alternative are anticipated to be available.	

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Implementability (cont.)			
Availability of Services and Materials (cont.)	Technologies included as part of this alternative are generally available and sufficiently demonstrated. No prospective technologies are anticipated as part of this alternative.	Technologies included as part of this alternative are generally available and sufficiently demonstrated. No prospective technologies are anticipated as part of this alternative. Use of physical separation techniques could, if effective, reduce the overall cost of this alternative; however, the potential effectiveness, implementability, risks and cost of such techniques cannot be determined from available information. An on-site pilot-scale test would be necessary to make such determinations.	Technologies included as part of this alternative are generally available and sufficiently demonstrated. No prospective technologies are anticipated as part of this alternative.
Cost			
Capital cost	\$41,400,000	\$259,000,000 - \$415,000,000	\$117,000,000
O&M costs	\$42,000 - \$414,000	\$40,000 - \$412,000	\$52,000 - \$604,000
Total costs (30 years):			
No fiscal constraint			
Present worth	\$43,000,000	\$250,000,000 - \$401,000,000	\$112,000,000
Total (non-discounted)	\$45,000,000	\$262,000,000 - \$419,000,000	\$121,000,000
Fiscally constrained (\$10M/yr):			
Present worth	\$46,000,000	\$211,000,000 - <i>Not Estimated</i>	\$121,000,000
Total (non-discounted)	\$49,000,000	\$286,000,000 - <i>Not Estimated</i>	\$141,000,000

The cost estimates summarized above and provided elsewhere in this SFS are feasibility level cost estimates; that is, they were developed to a level of accuracy such that the actual costs incurred to implement the alternatives should fall within a range bounded by 50% above and 30% below these estimates.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 5 2008

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable Christopher S. Bond
U.S. Senate
274 Senate Russell Office Building
Washington, D.C. 20510

Dear Senator Bond:

Thank you for your letter dated January 22, 2008, regarding the Westlake Landfill Superfund Site. I would like to assure you that we have reviewed existing information on floods and levee performance. Enclosed is a detailed technical memorandum that summarizes our findings and conclusions. Also enclosed; a presentation that my staff prepared, a page listing the resources that were used, and a map showing the West Lake Landfill/Earth City Industrial Park Levee System.

We analyzed the information in response to your question regarding the flood of 1993 and the breach of the Chesterfield levee upstream. The Chesterfield-Monarch Levee was considered by FEMA to be a 100-year levee. Early speculation was that the failure of the Chesterfield-Monarch type levees relieved the pressures on the urban levees that did not fail. To determine the real effects existing levees had on peak levels for the Mississippi and Missouri Rivers, the U.S. Army Corps of Engineers utilized its UNET model. Results of the modeling demonstrated that if all levees protecting agricultural land such as the Chesterfield-Monarch, 100-year levee were absent, the peak flood stage in the St. Louis area would have been reduced by 2.5 feet, but still 17 feet above flood stage and almost 4 feet higher than the previous maximum recorded from the 1973 flood event. Neither of these flood events overtopped or caused either the Earth City or Riverport Levee to fail. Another conclusion from the modeling indicated that even if the levees in place were constructed to contain all flows, peak stages at St. Louis would have been increased by 2.3 feet, still above flood stage, but well below the designated 500-year design level of the Earth City and Riverport levees. The independent model commissioned by the *St. Louis Post-Dispatch* concluded that the overtopping and eventual breaching of two levees downstream from St. Louis at Columbia and Harrisonville, Illinois, reduced peak stage at St. Louis by 1.6 feet and lends support to the UNET findings.

You also expressed concerns regarding the potential failure of the Earth City levee and the impacts of any contamination that might escape the West Lake landfill as a result. In response to your concerns, we conducted a thorough review and analysis of the



levee system surrounding Earth City and the Westlake Landfill site location. In summary, the levee system surrounding the West Lake area is highly engineered to exceed the 500-year flood level and not like the Chesterfield levees that failed during the flood of 1993. The 500-year flood level would be 3-7 feet below the top of the levee. The West Lake landfill is almost 1.5 miles behind the levee, and the surface grade at the landfill is at least 25 feet above the historic floodplain. Also, the closest drinking water intake is approximately 8 miles from the site. If flood waters were to reach the landfill, and if the toe were unprotected (e.g., no bank stabilization in place, no bank armoring in place) then what would predictably be low-energy flood waters could begin to erode the bank and entrain landfill material into already contaminated and undrinkable flood water. However, the engineering of the cap at the West Lake landfill will provide some armoring of the toe and consideration will be given during cap design of other measures to prevent possible erosion of the slope.

We have thoroughly analyzed any potential flooding concerns as part of the Remedial Investigation and Feasibility Study process. That information, as well as other technical documents, will be placed in the administrative records for the site located at The Bridgeton Trails Branch of the St. Louis County Library, 3455 McKelvey Road, Bridgeton, Missouri, and EPA's Regional Office in Kansas City, Kansas. As we proceed with the remedy selection process, we will review and utilize any additional technical information relevant to the decision making process.

Again, thank you for your letter. If you have any further questions, please feel free to contact me at (913) 551-7006 or your staff may call Rich Hood, Associate Regional Administrator for Media and Intergovernmental Relations, at 913-551-7906.

Sincerely,

A handwritten signature in black ink, appearing to read "John B. Askew". The signature is fluid and cursive, with a large initial "J" and a stylized "A".

John B. Askew
Regional Administrator

Enclosure(s)




UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

FEB 5 2008

MEMORANDUM

SUBJECT: Congressional Inquiry from Senator Christopher Bond - West Lake
Landfill Remedy

FROM: Cecilia Tapia 
Director, Superfund Division

TO: John B. Askew
Regional Administrator

At your request, we have reviewed the concerns outlined in the referenced letter and provide the following technical evaluation:

The Flood of 1993 Analysis

The Flood of 1993 in the Midwestern United States was a hydrometeorological event without precedent in modern times. In terms of precipitation amounts record river levels, flood duration, area of flooding and economic losses, it surpassed all previous floods in the United States. However, conditions that preceded the flood were a series of meteorological events that began in the summer of 1992.

July, September, and November 1992, were much wetter than normal in the Upper Mississippi River Basin. Winter precipitation was normal, but a wet spring followed. The period from April to June was the wettest observed in the upper basin in the last 99 years. As a result, soils were saturated, and many streams were already flowing above normal levels when summer rains began.

A persistent atmospheric pattern during the summer of 1993 caused excessive rainfall across much of the Upper Mississippi River Basin. Major flooding resulted primarily from a series of heavy rainfall events over the Upper Mississippi Basin from May to August 1993, which were unmatched in the historical records of the Central United States. During the June-August 1993 period, rainfall totals surpassed 12 inches across the eastern Dakotas, southern Minnesota, eastern Nebraska, and most of Wisconsin, Kansas, Iowa, Missouri, Illinois, and Indiana. Over 24 inches of rain fell on central and northeastern Kansas, northern and central Missouri, most of Iowa, southern Minnesota and southwestern Nebraska. Up to 38.4 inches of rain fell in east-central Iowa.

Wet antecedent soils, swollen river conditions and record rainfall resulted in the 1993 flood levels that ranged from below the 100-year up to the 500-year recurrence interval magnitude at many locations. For example, the 1993 flood stage at Louisiana, Missouri (about 100 miles above St. Louis, Missouri), is estimated to have a recurrence interval of nearly 500 years. At St. Louis, Missouri, the recurrence interval was about 175 years and at Chester, Illinois (about 70 miles below St. Louis, Missouri); the recurrence interval was about 100 years. At 45 U. S. Geological Survey (USGS) gauging stations, the flow levels exceeded the 100-year mark. However, the USGS has determined that the river reached record levels of river stage at St. Louis and elsewhere, although peak discharges were less than previously recorded.

Flood of 1993 Impacts

The Midwest Flood of 1993, one of the most costly flood events in U.S. history, flooded over 6.6 million acres in the 419 counties in the upper Mississippi Basin. Flood waters impacted numerous sectors (e.g., agriculture, residences and businesses, and transportation systems). One of the sectors that was immediately affected by flood waters and directly impacting the general population were public facilities.

The Flood of 1993 caused extensive damage to water and wastewater treatment plants and other public facilities. Water treatment plants are often located in floodplains to be near well fields or the surface water that supplies the system. In addition, water supply lines must cross flood plains to serve flood plain residents. The U.S. Environmental Protection Agency identified 200 municipal water systems impacted to some degree by the flood. The most prominent example is the Des Moines Water Works that serves the City of Des Moines, Iowa and adjoining communities. The plant was flooded and remained out of operation for 12 days, and water from it was not safe to drink for another seven days.

Wastewater treatment plants tend to be located in floodplains which are generally the lowest point in a community and offer the advantage of gravity flow. Furthermore, the effluent from these plants is discharged into major rivers or streams. The impact of flooding ranges from temporary plant shutdown and the discharge of raw sewage into the river during the flood to physical damage that result in extended plant shutdowns and continued discharges of raw sewage until the plant could be repaired. A total of 388 wastewater facilities were impacted by the flood.

Damages to utilities, including water and wastewater treatment facilities and storm-sewer systems, exceeded \$85 million.

Under non-quantifiable damage costs, the EPA determined that 59 Superfund sites experienced flooding; however, impacts to the sites were minimal and corrective measures have been completed on sites requiring them. In addition, 73

solid waste treatment, storage and disposal sites were also flooded, large propane tanks were dislodged and floated downriver creating the potential for massive explosions. Beside large propane tanks, the state collected over 18,000 orphaned drums -- each with a potential hazardous or toxic substance -- and a large amount of household hazardous wastes whose disposal was necessitated by the flooding.

In response to concerns regarding the safety of private wells, a water well survey was established in coordination with the nine-flood states. The EPA performed flood water quality sampling around major metropolitan areas on the Missouri River. In some cases, drinking water standards were exceeded, but the majority of the readings posed no health risk. Results from sampling of treated drinking water revealed three locations where the Maximum Contaminant Level was exceeded although results from a single sample do not necessarily indicate a problem. The USGS and the National Oceanic and Atmospheric Administration have not found significant changes in water chemistry since the 1993 flood.

Flood Control

During the past 150 years or so, the Mississippi River Basin has undergone extensive development by mankind. Over the years structural flood protection both public and private has been built to protect the adjoining population and associated economic development.

The flood control system for the Upper Mississippi is made up of three components: flood control reservoirs, agricultural levees, and urban levees/floodwalls.

There are about 60 Federal flood control reservoirs above St. Louis. During the 1993 flood, the Federal flood control reservoir system stored over 17 million acre feet of flood water. None of this water reached St. Louis until after the crest in August 1993. These reservoirs are credited with reducing flood levels at St. Louis by about three feet.

There are about 1,600 levees above St. Louis. About 95% of these levees are agricultural levees (much like the Chesterfield Levee) providing relatively low levels of flood protection to millions of acres of cropland against floods of 10 to 50 years frequency. The remaining 5% are urban levees/floodwalls (mostly federal) built to a very high level to protect cities and towns against flood of this magnitude.

During the 1993 flood, all levees and flood walls built to urban design standards withstood the onslaught. No urban levee or floodwall was overtopped and the densely populated areas they protected were not flooded by the river. Examples of these levees are the Earth City Levee District and the Riverport Levee District.

The Earth City Levee District

The Earth City Levee District is a 1,891-acre District situated in St. Louis County, just five minutes west of Lambert-St. Louis International Airport and less than a mile west of the busiest major highway intersection in Missouri. Its strategic location is a major reason for the District's development success. The District is a political subdivision of Missouri.

Since 1972, business and economic growth in the St. Louis region have greatly benefited from the development of attractive and very functional industrial, office and retail properties in the District. Location is one of the important keys to the District's development success.

At the end of 2005, the District contained 450 businesses, employing 22,800 with an annual payroll exceeding \$1 billion. The almost 240 properties in the District have over 18 million square feet of space with a market value of \$1.2 billion.

The District is protected from flooding by a 500-year levee and supporting flood control system managed around the clock by a qualified management firm and assisted by professional engineering firms. The U.S. Army Corps of Engineers conducts yearly inspections. The Federal Emergency Management Agency (FEMA) maps designate the District as being protected by a 500-year flood levee. As a result, the National Flood Insurance Program regulations do not require the purchase of flood insurance.

The District's flood control system is considered by many in the field to be one of the finest in the entire country. Supporting this claim is the fact that since 1972, four major floods have tested the District's flood control system – including the record 1993 flood – with minimal damage that was quickly repaired. (*See Attachment A for responses to similar concerns of Dr. Robert E. Criss, of the Missouri Coalition of the Environment*).

Major Flood Events

Four major floods have occurred since the 2.6-mile, 500-year earthen levee was completed in September 1972. A major flood is when the water level in the Missouri River is at a minimum of 10 feet above flood stage for at least one week.

During the four major floods, the District's flood control system sustained minimal damage that was quickly repaired.

Spring 1973 and fall of 1986: Crest elevations were under the 50-year flood level. The 1973 flood stage lasted about 75 days. This is significant as at this time, the 500-year levee was only six months old. The 1986 flood was higher than the 1973 flood but of a relatively short duration.

August 1993: During this record level flood, the Missouri River crested at 14.6 feet above flood stage on August 2, and remained above flood stage for about 110 days. It has been estimated that at its August 2 crest, the Missouri River was at a 200-year flood level. The levee and the other components of the District's flood control system successfully resisted the flood.

May 1995: The Missouri River crested at 11.7 feet above flood stage but the flood duration was relatively short.

In addition to the four major floods, the Missouri River has been over flood stage numerous times --usually at a level less than five feet over flood stage. These are normal events.

Immediately to the south of the Earth City Levee District is the Riverport Levee District.

The Riverport Levee District

The Riverport Project is located in the City of Maryland Heights, St. Louis County, Missouri, approximately 17 miles northwest of the City of St. Louis. The Urban Levee, designed for the 500-year Missouri River flood event, extends from about river mile 30.4 to river mile 29.6 above the Mississippi River on the right descending bank.

The project consists of a 1.7 mile long levee that protects the Riverport area and a portion of Interstate Highway I-70 from Missouri River floods.

Riverport Business Park is a 525-acre master-planned business and entertainment community that was carved out of the Missouri River floodplain through the construction of the Riverport Levee in 1980.

The Riverport Levee system is similar to the Earth City Levee District. It is made up of 1.5 miles of earthen levee, under seepage protection berms, a relief well system comprised of 76 wells, a three-stage pump station supplied by primary and generator backup power, and the associated stormwater retention channels within the development. Of the 1.5 miles of levee, only 0.4 mile is in direct contact with the Missouri River, the remainder is a flanking levee that runs between Riverport and the adjacent Howard Bend Levee District (to the south around Harrah's entertainment complex). Since the formation of the District, the system has been reviewed by the Army Corps of Engineers on a yearly basis.

Unlike some levee systems that were modified farm levees, the Riverport Levee was designed and constructed by Sverdrup, a world renowned Civil Engineering and Construction Company (subsequently acquired by Jacobs Engineering in 2000) to protect the Riverport Business Park. The Riverport Levee was designed

and constructed to an elevation exceeding the 500-year flood elevation by 3 feet to protect the significant investment associated with a Class A Business Park.

Levees

Recalling the Great Flood of 1993, the Missouri River rose to breach levees and flood all but a few spots along its reach in central and eastern Missouri--the primary exceptions being the Riverport and Earth City business parks in suburban St. Louis County. One of the most dramatic levee failures was the Monarch levee, which provided nominal 100-year flood protection for an area on the Missouri River called Chesterfield Valley, located in the city of Chesterfield in west St. Louis County.

The Chesterfield- Monarch Levee was considered by FEMA to be a 100-year levee, meaning that the valley it protected had roughly a 1 percent chance of flooding in any given year. By comparison, a community protected by a 500-year levee has about a 0.2 percent chance of flooding in a given year.

On July 30, an area of some 4,700 acres occupied by office and industrial parks, a large general aviation airport owned by St. Louis County government and a five-mile stretch of Interstate 64 disappeared under 10 feet of water. Because the levee break was in the upstream portion of the valley contained by the Monarch Levee, the floodwaters were very slow to drain out of that basin even as the level of the river dropped. Flood damage was estimated at more than \$320 million in 2006 dollars. Though no precise determination was possible because of limitations of historic records and continual changes in run-off characteristics throughout the river basins, the U.S. Army Corps of Engineers estimated that the 1993 flood was of lower frequency than a 100-year flood but not nearly as extreme as a 500-year flood--perhaps a 250-year flood.

The recovery of Chesterfield Valley since 1993 is a dramatic and inspiring story. Nearly a half billion dollars in public and private funds have been invested, with nearly 20 percent of that directed toward providing improved access and a 500-year flood protection system--a levee rated to withstand a flood level with a probability of occurring once in 500 years, or 0.2 percent probability in any one year. Business is booming, and the city of Chesterfield, along with the private interests that took the risk and invested in the recovery, are reaping handsome fiscal and economic rewards.

Early speculation was that the failure of the Chesterfield-Monarch type levees relieved the pressures on the urban type levees that did not fail. However, to ascertain the actual effect existing levees had on peak 1993 Mississippi and Missouri river flood stages', the U.S. Army Corps of Engineers utilized their newly developed modeling program, UNET, which analyzed unsteady state river flow conditions. **The analysis used flow data from 1993, 1986, and 1973 floods. The analysis suggested that if all levees (other than urban levees)**

were absent, the peak stage at St. Louis in 1993 would have been reduced by 2.5 feet, but still more than 17 feet above flood-stage and almost 4 feet higher than the previous known maximum level recorded during the 1973 event.

Flood Water Dynamics

Upland erosion and sedimentation in downstream areas are major causes of reduced water quality. Significant floodplain erosion and deposition occurred during the 1993 flood, principally on floodplain agricultural lands along the Missouri River. Preliminary analyses of aerial, satellite imagery, and historic Missouri River floodplain maps reveal that more than 90 percent of the areas affected by significant erosion and deposition are associated with breached levees situated in active, high energy floodplain zones. Review of the history of levee failures in this area shows levees have been breached repeatedly at sites of natural river cutoffs or chutes in the past three decades.

Through the effects of soil erosion, any unprotected soil surface can be the source of suspended solids. Total suspended solids (TSS) may carry contaminants, such as nutrients, organic matter, pesticides, and heavy metals. In most rivers TSS is primarily composed of small mineral particles. TSS is often referred to as 'turbidity'. TSS, especially when the particles are small (< 63 micrometers), carry many substances that are harmful or toxic.

The analysis of TSS loads provides useful information about the physical behavior of rivers. Because total suspended solids concentration is partly a function of discharge, TSS loads increases as discharge increases. In many rivers, the amount of sediment (solids) transported (the load) can vary over three orders of magnitude during the year.

Comparison of the effects of the 1993 floods on the upper Mississippi and Missouri rivers shows that rivers in broadly similar physiographic regions may respond very differently to floods. The annual discharges of the upper Mississippi River are generally comparable to those of the Missouri River, but sediment yields of the Missouri average more than five times those of the Upper Mississippi. Average slope of the lower Missouri River floodplain (upstream of St. Louis) is about twice that of the middle Mississippi River floodplain (downstream from the St. Louis). Levee breaches along the lower Missouri commonly resulted in high-velocity flows across its relatively narrow and relatively steep (high gradient) floodplain.

Transport of sediment by fluid flow involves two fundamental steps: (1) erosion and entrainment of sediment, and (2) subsequent, sustained down-current or downstream movement of sediment. The term entrainment refers to the processes involved in lifting resting particles from the bed or otherwise putting them in motion. Once particles are lifted from the sediment into the overlying water, the rate at which they fall back to the bed – settling velocity – is an important factor

in determining how far the particles travel downstream before they again come to rest or are deposited.

As previously noted, the average slope of the lower Missouri River floodplain (upstream of St. Louis) is twice that of the middle Mississippi River floodplain (down stream from St. Louis). As slope increases, the component of gravitational force parallel to the slope also increases. Thus, velocity is directly proportional to slope and increase as slope increases. Therefore, any suspended solids entrained in high-velocity flood waters in the Missouri River (above St. Louis) would stay in suspension until both slope and velocity decrease which would most likely be when flood waters enter the lower Mississippi River floodplain (downstream of St. Louis).

Conclusion

Based on my analysis of the data, presented above, I submit the following conclusions:

1) The Flood of 1993 was the culmination of a series of unprecedented meteorological events creating a flood of previously unseen magnitude in extent, damage and costs. The recurrence interval of the flood ranged from less than 100 years at many locations to near 500 years on segments of the Mississippi and Missouri Rivers.

2) Services critical to human health were impacted by the flood waters. Hundreds of public drinking water suppliers lost their wells and their ability to supply their customers with clean, safe drinking water. Many locations issued boil orders before consuming any water from affected water supplies. Hundreds of waste water facilities were inundated with flood waters, leading to service disruption or total shutdown, resulting in ten of thousands of gallons of raw, untreated sewage being discharged into already contaminated flood waters. The Safe Drinking Water Act requires public water systems to test the water for contaminants before allowing the public to resume consumption.

3) Fifty-nine Superfund sites (West Lake Landfill was not one of the 59), managed by the U.S. Environmental Protection Agency also experienced flooding; fortunately impacts were minimal and correctives measures were implemented at sites requiring them. Flood damage at other unprotected locations proved more problematic, as the 18,000 orphaned drums containing unknown substances floated along with rising flood waters. Other businesses located in the flood plains and eventually inundated by the flood waters included gas stations, automotive garages, agricultural businesses, manufacturing companies, and solid waste disposal facilities. Each of these businesses used, manufactured, stored or transported various forms of hazardous and non-hazardous pollutants to the river.

3) Areas that fared the best were protected by state-of-the-industry engineered 500-year flood levees/floodwalls, specifically, the Earth City Levee District and

the Riverfront Levee District. Both of these Districts have been designated by FEMA as 500-year levees providing a higher level of protection (about a 0.2 percent chance of flooding in a given year) than protection from a 100-year levee, meaning that the valley it protected had roughly a 1 percent chance of flooding in any given year. The 500-year levee protection does not go without its rewards as these Districts are home to businesses ranging from the Fortune 500 to small independent companies and employing thousands of local residents. All were protected from the 500-year flood with state-of-the-industry designed and constructed flood control systems.

4) Unrelated to the Earth City Levee District, but able to take advantage of the levee, by coincidence of location, is Operable Unit 1 (OU1) of the West Lake Landfill. The toe of the most northern part of OU1 (See Attachment B) is approximately 1.5 miles from the bank of the Missouri River. Between the toe of OU1 and the river are the 500-year Earth City Levee and the Earth City flood control retention pond. Both these components of the Earth City Levee District system provide the 500-year flood protection to the landfill as it does to the businesses located in the confines of the district proper.

The construction standard for a 500-year levee requires a minimum of three feet of freeboard above the 500-year flood level. For example, on the I-70 end of the 2.6 mile levee the 500-year flood level is at an elevation of 459.03 feet, and the top of the levee is 462.03 feet. At the northern end of the levee the 500-year level is 452.15 feet and the top of the levee is 459.34 feet. The flood waters of 1993 were significantly below the top of the levee.

However, there are other variables that could become a factor in controlling flood waters. As alluded to earlier, one of the successful methods of controlling the 1993 flood waters was the use of the reservoirs up stream. As stated, the Federal flood control reservoirs system stored over 17 million acre feet of flood water. None of this water reached St. Louis until after the crest in August 1993. These reservoirs are credited with reducing flood levels at St. Louis by about three feet. Even if the reservoirs could only hold half the amount they did, the extra water downstream would still not have breached the 500-year levees.

5) If flood waters were to reach the toe of OU1, and if the toe were unprotected (e.g., no bank stabilization in place, no bank armoring in place) then what would predictably be low energy flood waters could begin to erode the bank and entrain landfill material into already contaminated and undrinkable flood water. However, the engineering of the cap at the West Lake Landfill will consider armoring of some type to prevent possible erosion of the slope.

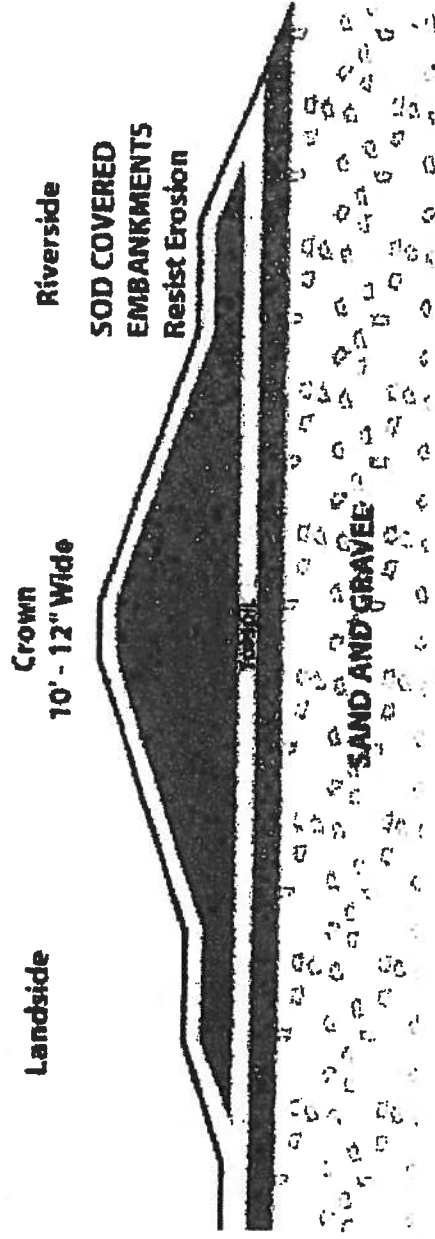
Attachment(s)

WEST LAKE LANDFILL BRIEFING
February 2008

"The West Lake Landfill is located in a geomorphic floodplain. A floodplain is a place where a river floods commonly. Levees fail. Several levees in the St. Louis County have failed in the last fifteen years. It's preposterous to claim that levees don't fail. These risks are chronically underestimated." - Robert E. Criss, PhD, Washington University's Department of Earth and Planetary Sciences.

"There are about 60 Federal flood control reservoirs above St. Louis and about 1,600 levees. About 95% of these levees are agricultural levees (mostly are privately owned) providing relatively low levels of flood protection to millions of acres of cropland against floods of 10 to 15 years frequency. The remaining 5% are urban levees/floodwalls (mostly Federal) built to a very high level to protect cities and towns against floods of great magnitude. During the 1993 flood, all levees/floodwalls built to urban design standards withstood the onslaught. No urban levee or floodwall was overtopped . . . and flooded by the River." – *Protecting Society From Flood Damage, A Case Study from the 1993 Upper Mississippi River Flood*, Lovelace, James T., Strauser, Claude N. St. Louis District, USACOE, 2008.

EARTH CITY LEVEE SYSTEM*



Levee: The District is protected by 3 reaches of levee

The 2.6 mile 500-year-rated earthen levee was constructed in 1972 to USACOE standards. The levee has a sand core. A typical cross-section of the levee has a 10-foot wide top with 1-foot vertically to 3-foot horizontally sloped sides. The riverside face of the levee has a 5-foot thick soil cover intended to protect the levee from seepage penetration during a major flood event.

* <http://www.earthcityld.com/index.aspx>

EARTH CITY LEVEE SYSTEM

Four major floods have occurred since the levee system was completed in 1972.

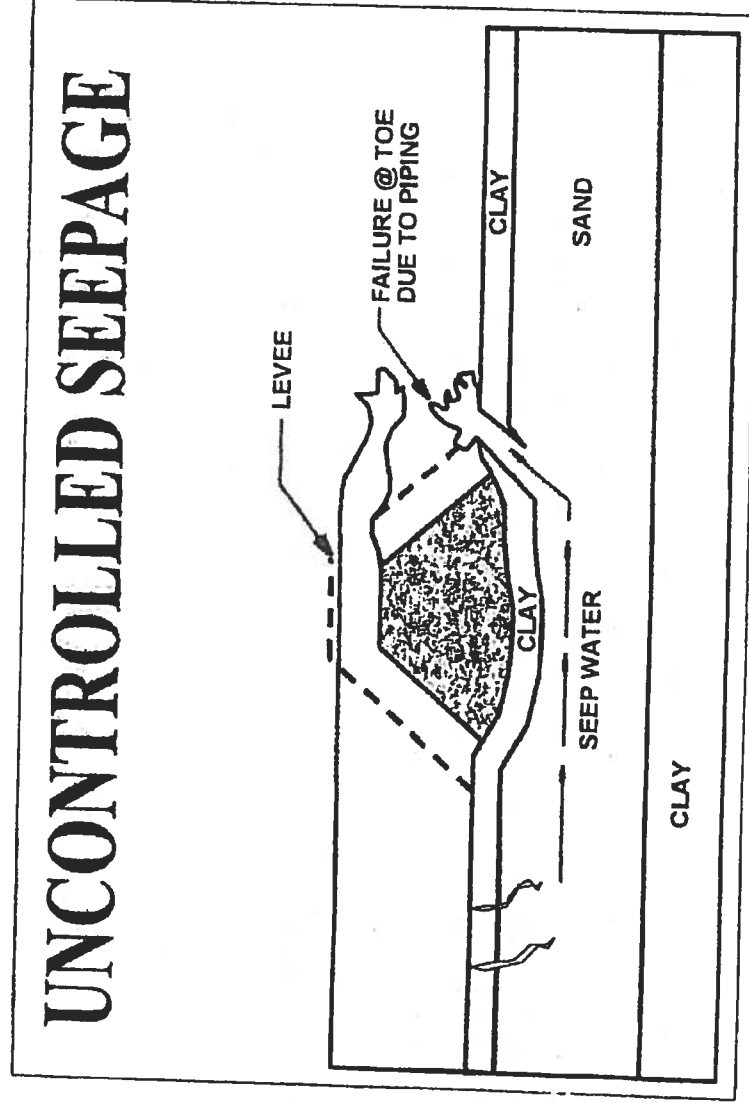
Spring 1973 and Fall 1986: Crest elevations were under the 50-year flood level. The 1973 flood stage lasted 75 days, This is significant, as the levee was only six months old. The 1986 flood was higher than the 1973 level but of a relatively short duration.

August 1993: During this record level flood, the Missouri River crested at 14.6 feet above flood stage on August 2, and remained above flood stage for about 110 days. It has been estimated that at its August 2 crest, the Missouri was at a 200-year flood level.

May 1995: The Missouri River crested at 11.7 feet above flood stage, but the flood duration was relatively short.

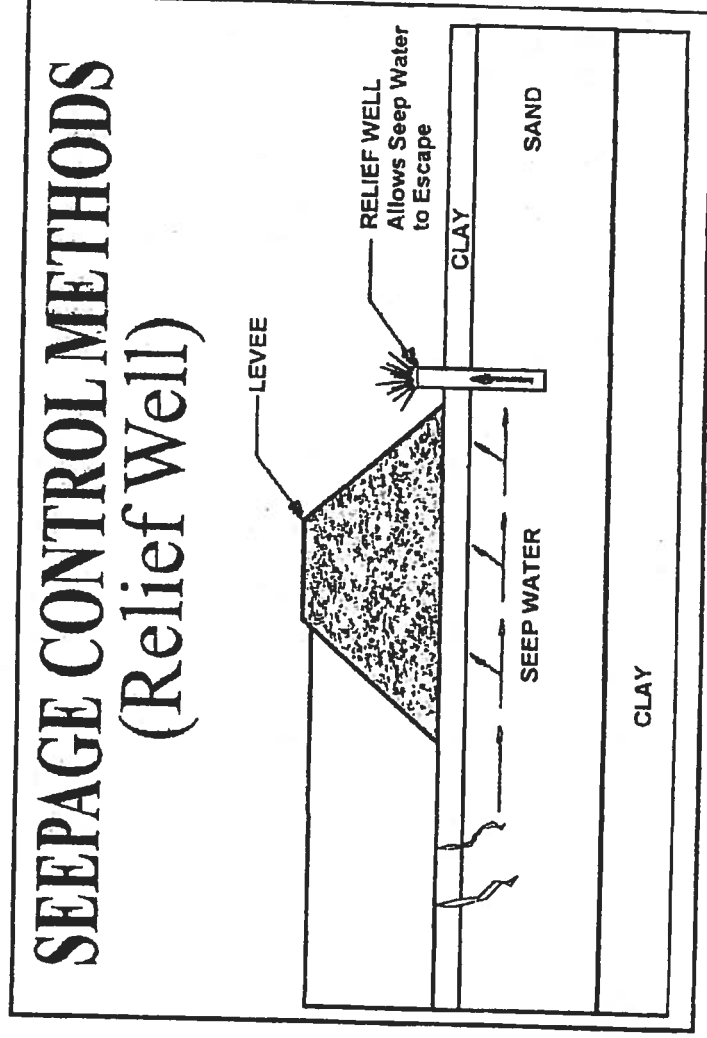
Since the 500-year levee was completed in September 1972, in addition to the four major floods, the Missouri River has been over flood stage numerous times – mostly at a level less than 5 feet over flood stage.

"Levees can fail either by overtopping or by piping through or underneath the structure. That is, the river can form blow-holes [known as "blew holes" or scour holes]. Water can pipe through or underneath the levee. The water bubbles up under the levee." - Robert E. Criss, Ph.D, Washington University's Department of Earth and Planetary Sciences.



EARTH CITY LEVEE SYSTEM

The District has a total of 83 relief wells of which 67 are located along the landside toe of the levee. These 67 wells were installed between 1988 and 1992. The wells are 60 deep gravity flow wells with a designed discharge capacity of 780 gallons per minute. Without the relief wells, the soil moved by the underground water flow could create voids under the levee. The levee could collapse into the void.



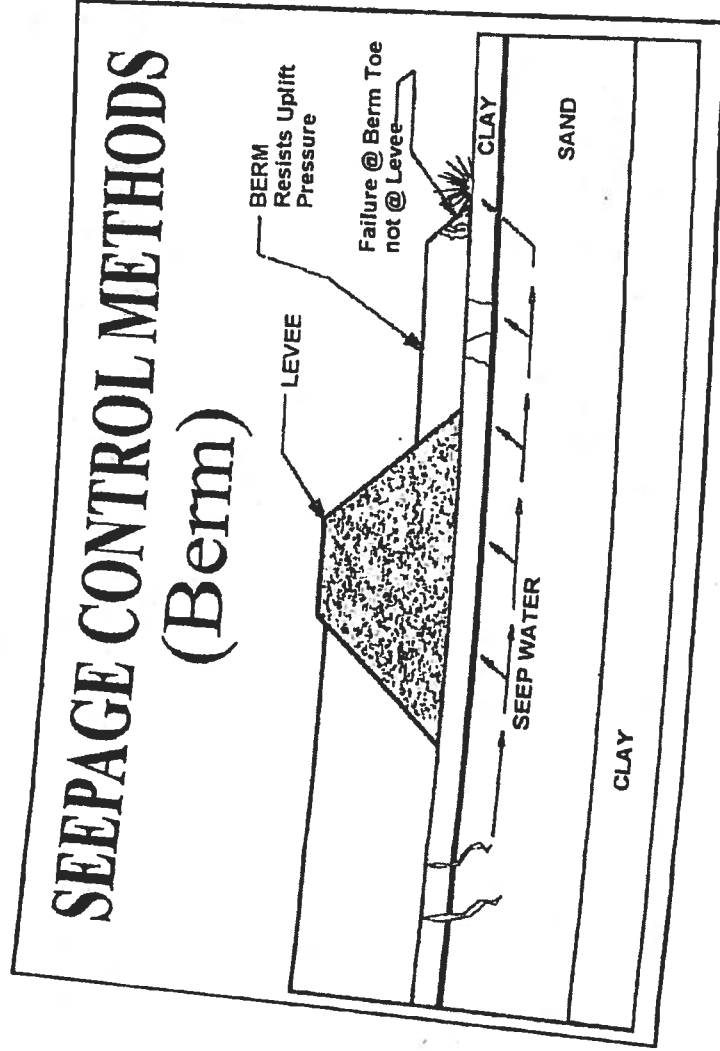
"In the event of a failure, you have high energy, high velocity water that catastrophically scours the ground, especially unconsolidated material which it scatters for miles." - Robert E. Criss, PhD, Washington University's Department of Earth and Planetary Sciences.

It has been shown that the Earth City Levee and the other components of the Districts flood control system successfully resisted the 500-year flood of 1993. With a 0.2% recurrence interval within any given year for 500-year flood it is anticipated that the Earth City Levee System will remain protective. However, in the event the levee is breached and the 500-year flood waters were to encroach on the business park it would be expected to result in no more than about two feet of water at the northwestern toe of the landfill. Thus, only the lower two feet of the toe of the landfill would be impacted.

During the Remedial Design phase of the project different materials and technologies (e.g., bank stabilization systems, levee armoring systems) will be evaluated for their protective properties against high velocity water damage.

EARTH CITY LEVEE SYSTEM

A landside under seepage protection berm extends the entire length of the 2.6 mile levee up to a distance for 625 feet east of the toe of the levee. The purpose of the berm is to contain excess groundwater pressure. The berm consists of a layer of heavy clay that counteracts the groundwater pressure under the levee.



EARTH CITY LEVEE SYSTEM (additional controls)

Interior Storm Water Drainage System

The interior storm water drainage system for 82% of the District's 1,891 acres is handled through an interconnecting system of ditches, channels and lakes, all of which ultimately gravity flow to the District's pump station and discharge structure.

The storm water in the Rock Industrial Park and Northwest Industrial Park areas of the District contain storm water within their areas in retention ponds. The sole method of discharge from the ponds is percolation and evaporation

Pump Station

The District's pump station and discharge structure, a vital component of the District's flood control system, penetrates the 2.6 mile levee about 500 feet south of St. Charles Rock Road. As mentioned earlier, 82% of the District's storm water is tributary to the pump station and discharge structure.

The pump station was completed in 1972 and rests on top of the discharge structure. The reinforced concrete pump station contains three, 150 hp electric pumps each capable of discharging 22,500 gpm -- even during a major flood event. A diesel generator operates the pumps in the event of a power failure.

EARTH CITY LEVEE SYSTEM (additional controls)

Maintenance

The District has developed a comprehensive and ongoing maintenance program whereby the entire levee system, relief wells, pump station and other mechanical and electrical systems are inspected at least annually by qualified independent contractors. The USACOE (Corps) inspect the levee and pump station normally on an annual basis.

The District's levee and the pump station have qualified for participation in the Corp's rehabilitation assistance program for flood control projects (e.g. Public Law 84-99). As a result of such participation, the Corps will pay 80% of the construction costs incurred in connection with rehabilitation of the levee or pump station resulting from flooding. Costs such as dirt are not covered by the Corps' assistance program.

Earth City Levee District

District Development

Development within the District is commercial in nature consisting primarily of industrial and distribution style buildings, service centers, office buildings, hotels along with some service related retail and specialty facilities for a total of 450 businesses. Some of the companies are:

ADVO, Inc. - direct mail & advertising

Almo Distributing- EHP Direct - major appliance & consumer electronics distributor

Best Buy Service/DDC - Warehouse consumer electronics distribution & repair

Candlewood Suites Hotel - extended stay hotel

Central Mine Equipment Company - drilling equipment & tooling manufacturer

Cingular Wireless - cell site maintenance warehouse

DHL Express - air express & ground delivery service

Federal Aviation Administration - maintain NAS electrical equipment

FedEx Express - package delivery

Home Depot Supply - maintenance products

Northrop Grumman Corp. - electronic systems-marketing

St. Louis Rams - professional football

United Parcel Services of America, Inc. - small package delivery

Sanders, LaTonya

Subject: West Lake Landfill Update for Congressional Staff

Start: Fri 2/7/2014 11:30 AM

End: Fri 2/7/2014 12:00 PM

Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Sanders, LaTonya

Required Attendees: Brecht Mulvihill; Brendan Fahey; Downey Palmer; Edwilla Massey; Erik Rust; Joeana Middleton; John Scates; Kerry DeGregorio; Lou Aboussie; Mark Fowler; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Patrick Bond; Pauline Jamry; Steven Engelhardt; Tod Martin

Call in number: 866-299-3188

Access Code: 9135517444

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, February 11, 2014 4:42 PM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

We stated on the conference call last Friday that it would be mid-March or so.

We're getting close to finalizing. I'll let you know as soon as we confirm a date, time, location.

Thanks.

From: Middleton, Joeana (McCaskill) [mailto:Joeana_Middleton@mccaskill.senate.gov]
Sent: Tuesday, February 11, 2014 4:39 PM
To: Sanders, LaTonya
Subject: RE: Rescheduled West Lake Community Meeting

Hi LaTonya,

Is there an update for when the next EPA Public Meeting is planned regarding West Lake?

Thank you,
Jo

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]
Sent: Thursday, December 19, 2013 9:47 AM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

The January 9 meeting is not an EPA public meeting. From what I understand it's the "Facebook group's" meeting or the "larger West Lake group."

The next EPA public meeting will be held in February, date and location TBD.

I plan to attend that meeting.

I hope you and your family have a wonderful holiday season!

--LaTonya

From: Middleton, Joeana (McCaskill) [mailto:Joeana_Middleton@mccaskill.senate.gov]
Sent: Wednesday, December 18, 2013 10:23 AM
To: Sanders, LaTonya
Subject: RE: Rescheduled West Lake Community Meeting

Hi LaTonya—I'm sorry I missed you at the last CAG meeting this week. Perhaps you'll be at the West Lake Public Meeting? Karl announced that the next public meeting would occur January 9, 2014? Is this date correct? If so, where will the meeting be located?

Thank you,
Jo

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]
Sent: Thursday, December 05, 2013 10:33 AM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

I had a wonderful Thanksgiving holiday, I hope yours was as well.

We didn't have a public meeting scheduled for West Lake in October.

Our plan is to hold a public meeting in January.

We're in the final review process of the groundwater data from July.

We're also discussing meeting logistics and format.

I hope to have a firm date to you soon.

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

From: Middleton, Joeana (McCaskill) [mailto:Joeana_Middleton@mccaskill.senate.gov]
Sent: Wednesday, December 04, 2013 9:56 AM
To: Sanders, LaTonya
Subject: Rescheduled West Lake Community Meeting

Hi LaTonya,

I hope you had a nice Thanksgiving holiday.

I'm writing to find out if there's any updated information regarding the West Lake public meeting that would have taken place last month, I assume, if the shutdown hadn't occurred. Is there any news on that front?

Thanks,
Jo

Joeana L. Middleton
Regional Director
Office of U.S. Senator Claire McCaskill

5850 Delmar Boulevard, Suite A
Saint Louis, MO 63112
Phone: (314) 367-1364
Fax: (314) 361-8649
joeana_middleton@mccaskill.senate.gov

CONNECT with CLAIRE at MCCASKILL.SENATE.GOV



Sanders, LaTonya

From: Sanders, LaTonya
Sent: Tuesday, February 25, 2014 4:37 PM
To: Middleton, Joeana (McCaskill)
Subject: RE: Rescheduled West Lake Community Meeting

Hi Jo,

No update as of yet.

We're still planning to have one soon.

Thanks.

From: Middleton, Joeana (McCaskill) <Joeana_Middleton@mccaskill.senate.gov>
Sent: Tuesday, February 25, 2014 2:03 PM
To: Sanders, LaTonya
Subject: RE: Rescheduled West Lake Community Meeting

Hi LaTonya,

Circling back on this--is there any update?

Thank you,
Jo

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]
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LaTonya E. Sanders
Congressional Liaison

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Office of the Regional Administrator
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11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
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Email: sanders.latonya@epa.gov

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Phone: (314) 367-1364
Fax: (314) 361-8649
joeana_middleton@mccaskill.senate.gov

CONNECT with CLAIRE at MCCASKILL.SENATE.GOV



Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, February 27, 2014 11:52 AM
To: 'Brecht Mulvihill'; 'Brendan Fahey'; 'Downey Palmer'; Edwilla Massey; Erik Rust; 'Joeana Middleton'; John Scates; Kerry DeGregorio; 'Lou Aboussie'; 'Mark Fowler'; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Nichole Distefano; Patrick Bond; Pauline Jamry; Steven Engelhardt; 'Tod Martin'
Subject: West Lake Landfill Update
Attachments: 140227-West Lake Update.pdf

Hello:

EPA Region 7 has created the West Lake Update in an effort to inform the community about the progress of environmental activities taking place at the West Lake Landfill Superfund Site in Bridgeton, Mo.

The information about the West Lake Update is also being shared with other elected officials, the Community Advisory Group, Missouri Coalition for the Environment and other stakeholders.

<http://www.scribd.com/doc/209607503/West-Lake-Update-February-27-2014>

We plan to provide routine updates which can be found at the links below. I will email you each time we have a new update.

http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

<http://www.facebook.com/eparegion7>

<http://www.twitter.com/eparegion7>

<http://www.scribd.com/eparegion7>

LaTonya E. Sanders
Congressional Liaison

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Lenexa, Kansas 66219

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Email: sanders.latonya@epa.gov



West Lake Update

February 27, 2014

Welcome to West Lake Update

This update is provided by EPA Region 7 in an effort to inform the community about the progress of environmental activities taking place at the West Lake Landfill Superfund Site in Bridgeton, Mo. EPA plans to provide routine updates which can be found at the links below.

Groundwater Report Under Review



On February 24, 2014, the potentially responsible parties provided the Groundwater Monitoring Report to EPA containing the results of the

October 2013 sampling event. EPA is currently reviewing the report for completeness and will post it online upon completion of the review. EPA has shared the report with the U.S. Geological Survey for its review as well.

How You Can Be Involved

Get involved in the Community Advisory Group (CAG) (<http://www.westlakecag.org/>). A Superfund Community Advisory Group (CAG) is made up of members of the community and is designed to serve as the focal point for the exchange of information among the local community and EPA, the state regulatory agency, and other pertinent federal agencies involved in cleanup of a Superfund site. EPA encourages residents to attend routine CAG meetings to stay informed.

EPA in Your Community

EPA representatives attended the Community Advisory Group meeting February 24, 2014. EPA staff, Ben Washburn and Karim Dawani also conducted interviews this week with residents and members of the local business community. Information obtained from these interviews will be used by EPA to revise its Community Involvement Plan, which will be made available to the public when it has been completed.

Drilling Work Continues On Site



Drilling and core sampling to locate an isolation barrier between West Lake Landfill and Bridgeton Landfill is going on for the next several weeks. (U.S. EPA photo)

Find us on

www.epa.gov/region7/cleanup/west_lake_landfill/index.htm
www.facebook.com/eparegion7
[www.twitter.com/eparegion7](https://twitter.com/eparegion7)
www.scribd.com/eparegion7

For More Information

General Information:

Ben Washburn, 913-551-7364
Washburn.Ben@epa.gov

Media Inquiries:

Chris Whitley, 913-551-7394
Whitley.Christopher@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Wednesday, March 05, 2014 3:40 PM
Subject: West Lake Update
Attachments: 140305-West Lake Update-FINAL.pdf

Hello:

Attached is the latest West Lake Update.

EPA Region 7 has created the West Lake Update in an effort to inform the community about the progress of environmental activities taking place at the West Lake Landfill Superfund Site in Bridgeton, Mo.

The information about the West Lake Update is also being shared with other elected officials, the Community Advisory Group, Missouri Coalition for the Environment and other stakeholders.

<http://www.scribd.com/doc/210848222/West-Lake-Update-March-5-2014>

We plan to provide routine updates which can be found at the links below. I will email you each time we have a new update.

http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

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<http://www.twitter.com/eparegion7>

<http://www.scribd.com/eparegion7>

LaTonya E. Sanders
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Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



West Lake Update

March 5, 2014

Welcome to West Lake Update

This update is provided by EPA Region 7 in an effort to inform the community about the progress of environmental activities taking place at the West Lake Landfill Superfund Site in Bridgeton, Mo.

Percussive Drilling to Begin This Week

A different drilling technology known as percussive drilling is being introduced at the site this week. EPA approved the use of this technology to achieve better core recovery for collecting laboratory samples to design the isolation barrier. EPA technical staff onsite will oversee the work as it begins.

"Percussive drilling differs from sonic drilling in the way the drill head advances into the ground," EPA project manager Dan Gravatt said. "With sonic drilling, the drill head advances by applying a constant down-pressure along with rotation of the drill head. With percussive drilling, the drill head does not rotate, and the drill head advances by applying a 'hammering' down-pressure. Percussive drilling through the waste should be more effective at collecting core samples than the grinding motion of the sonic drilling in these wastes."

How You Can Be Involved

Get involved in the Community Advisory Group (CAG) (<http://www.westlakecag.org/>). EPA encourages residents to attend routine CAG meetings to stay informed.

Community Inquiries:

Ben Washburn
913-551-7364
Washburn.Ben@epa.gov



Listening to You

On February 25 and 26, Ben Washburn of EPA Region 7's Office of Public Affairs and Karim Dawani of R7's Environmental Justice program conducted community interviews with people living and working in the area of Bridgeton and West Lake landfills. Ben and Karim met with individuals, small groups, business owners and employees.

Information gathered from these interviews will be used to update EPA's Community Involvement Plan (CIP). The CIP will outline how the agency will conduct community outreach and engage the community throughout the Superfund process. The CIP will be made available to the community once the update is complete.

Meet EPA's West Lake Team

EPA staff working on the West Lake project will be featured in future editions of the West Lake Update.



Dan Gravatt earned a Bachelor of Science degree in geology from the University of Rochester (N.Y.) in 1994 and a Master of Science degree in geochemistry from Cornell University in 1996. He holds a Professional Geologist's license from the State of Kansas. He began working for EPA in 2004 doing corrective action under the Resource

Conservation and Recovery Act (RCRA) program, then moved to EPA's Superfund program in 2009. Dan has been the project manager for the West Lake Landfill Site since early 2010.

Find Us On

www.epa.gov/region7/cleanup/west_lake_landfill/index.htm
www.facebook.com/eparegion7
[www.twitter.com/eparegion7](https://twitter.com/eparegion7)
www.scribd.com/eparegion7

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Friday, March 14, 2014 2:52 PM
To: 'Brecht Mulvihill'; 'Brendan Fahey'; 'Downey Palmer'; Edwilla Massey; Erik Rust; 'Joeana Middleton'; John Scates; Kerry DeGregorio; 'Lou Aboussie'; 'Mark Fowler'; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Nichole Distefano; Patrick Bond; Pauline Jamry; Steven Engelhardt; 'Tod Martin'
Subject: West Lake Update
Attachments: 140314-West Lake Update-FINAL.pdf

Hello:

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The information about the West Lake Update is also being shared with other elected officials, the Community Advisory Group, Missouri Coalition for the Environment and other stakeholders.

<http://www.scribd.com/doc/212492733/West-Lake-Update-March-14-2014>

We plan to provide routine updates which can be found at the links below. I will email you each time we have a new update.

http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

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Email: sanders.latonya@epa.gov



West Lake Update

March 14, 2014

EPA publishes West Lake Update to keep the public informed about the West Lake Landfill Site in Bridgeton, Mo.

From Karl Brooks, Regional Administrator: Agencies Working to Solve West Lake Challenges

As federal partners, both the Environmental Protection Agency and the U.S. Army Corps of Engineers often work together to decisively manage some of our countries most significant environmental projects. This partnership is clearly evident at successful Superfund projects across America, including here in the Midwest.

Col. Christopher Hall, the Commander of the St. Louis District of the U.S. Army Corps of Engineers manages a top-notch staff and we are looking for ways to best leverage the considerable expertise of both our federal agencies to solve the challenges at the West Lake landfill Superfund project. The federal, state and local agencies, as well as the Missouri Congressional delegation and the Missourians they represent all wish to continue protecting the health of residents in the West Lake area.

While we are working hard to address immediate needs, like overseeing the construction of a barrier from the subsurface smoldering event, we are considering future solutions that could most effectively protect the people who live and work in the area from this decades old site. The EPA and our partners are bringing to bear the best minds in this business to ensure public health is protected.

EPA is also working in partnership with another federal agency, the U.S. Geological Survey, to ensure that the most qualified scientists are enlisted to perform a robust review of the ground water data being collected. The USGS is currently reviewing the report containing the results of the October 2013 groundwater monitoring event.

Receiving Phone Calls?



EPA Region 7 has become aware that some Missouri residents may have recently received telephone calls regarding the West Lake Landfill Superfund Site.

These calls ask residents if they believe the site's ra-



Community Inquiries:

Ben Washburn
913-551-7364

Washburn.Ben@epa.gov

diologically contaminated materials should remain in Bridgeton.

Some residents have reported that the caller claims to be representing EPA.

These calls are not originating from, nor are they authorized by, EPA.

EPA has determined that a group known as the Coalition to Keep Us Safe is the organization making these calls. This organization is sponsored by Bridgeton Landfill and Rockroad Industries, subsidiaries of Republic Services.

Meet EPA's West Lake Team

A Chemical Engineering graduate from the University of Kansas, Cecilia M. Tapia is leading one of the most noteworthy Superfund divisions in the country at EPA Region 7. Her work protects public health and the environment through the cleanup of hazardous waste sites and provides emergency response to immediate threats while also addressing methods that lead to the reuse of formerly contaminated properties.



Cecilia M. Tapia

Known in EPA Region 7 for her industrious and meticulous work, Cecilia understands Superfund projects from the ground up having started her career as a project manager in the Superfund Division. In addition to her experience managing Superfund sites, she has managed enforcement and case development in the Air and Waste Management Division and served as the Director of the Enforcement Coordination Office, where she coordinated a large number of regulatory programs.

Cecilia is a noted leader in managing Superfund projects and is addressing the West Lake project with her team as aggressively as any in her nearly three decades in the field.

Find Us On

www.epa.gov/region7/cleanup/west_lake_landfill/index.htm
www.facebook.com/eparegion7
www.twitter.com/eparegion7
www.scribd.com/eparegion7

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, March 06, 2014 12:03 PM
To: 'Brecht Mulvihill'; 'Brendan Fahey'; 'Downey Palmer'; Edwillla Massey; Erik Rust; 'Joeana Middleton'; John Scates; Kerry DeGregorio; 'Lou Aboussie'; 'Mark Fowler'; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Nichole Distefano; Patrick Bond; Pauline Jamry; Steven Engelhardt; 'Tod Martin'
Subject: Response to Letter re: West Lake Landfill
Attachments: R7-14-000-6034-C.pdf

Good Afternoon,

Attached is the EPA response to the West Lake Landfill letter.

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7 Office of the Regional Administrator Office of
Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

MAR 06 2014

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable Claire McCaskill
United States Senate
Washington, DC 20510

The Honorable Roy Blunt
United States Senate
Washington, DC 20510

The Honorable William Lacy Clay
U.S. House of Representatives
Washington, DC 20515

The Honorable Ann Wagner
U.S. House of Representatives
Washington, DC 20515

Dear Members of Congress:

Thank you for your letter of February 28, 2014, to the U.S. Environmental Protection Agency, Region 7, about our work at the West Lake Landfill Superfund site. My EPA Region 7 colleagues and I understand your concerns about the pace of work at West Lake and take the responsibility of ensuring the health and safety of this community very seriously.

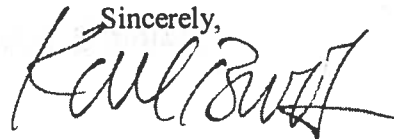
I have carefully considered your recommendation that the EPA explore working with the Army Corps of Engineers. I have recently spoken with Colonel Christopher Hall, commanding the St. Louis District of the Army Corps of Engineers, about ways in which his Corps District can assist the EPA in discharging this agency's duties at the site. As these conversations continue, I look forward to keeping you and your staff advised on the progress we are making in response to this request.

Please be assured that the EPA, working with our federal and state partners, including the Agency for Toxic Substances and Disease Registry, and the Missouri Departments of Health and Senior Services and the Missouri Department of Natural Resources, continues to review the health evidence at West Lake. To date this evidence establishes that West Lake and the adjoining Bridgeton Landfill continue to be managed in a way that protects the health and safety of Missourians who live and work nearby. We also believe that the legal orders imposed by the EPA Region 7 and the State of Missouri are currently protective of the health and safety of contractor employees currently working at the site.



Thank you again for your letter. I look forward to continuing our open dialogue on this important issue. The EPA remains committed to ensuring the health and safety of the West Lake community.

If we can be of any further assistance, please feel free to contact me at 913-551-7006, or your staff may call LaTonya Sanders, Congressional Liaison, at 913-551-7555.

Sincerely,


Karl Brooks

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Wednesday, March 19, 2014 12:53 PM
To: Kerry DeGregorio
Subject: West Lake Inquiry

Hi Kerry,

In regard to your question this morning about a statement made in the AG letter:

Statement: We understand preliminary tests have found radioactive material not only outside the originally identified "radioactive perimeter," but beyond the southern edge of OU-1 itself, into the north quarry of the Bridgeton landfill.

Question: Is this a new location that the AG refers to or one found outside of the fence?

I will have a response to you tomorrow or Friday at the latest.

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, March 20, 2014 4:38 PM
To: Patrick Bond; Kerry DeGregorio; Steven Engelhardt; Erik Rust
Subject: West Lake Landfill

Good Afternoon,

Please be prepared for a brief call (5 mins.) from Karl Brooks, EPA Region 7 Administrator, tomorrow morning between 8:30 – 9 a.m. CST

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Thursday, March 20, 2014 4:41 PM
To: 'Bond, Patrick (McCaskill)'; DeGregorio, Kerry (Blunt); 'steven.engelhardt@mail.house.gov'; 'erik.rust@mail.house.gov'
Subject: RE: West Lake Landfill

No, this is not a conference call.

He will call you individually at your office number.

From: Bond, Patrick (McCaskill) [mailto:Patrick_Bond@mccaskill.senate.gov]
Sent: Thursday, March 20, 2014 4:40 PM
To: Sanders, LaTonya; DeGregorio, Kerry (Blunt); 'steven.engelhardt@mail.house.gov'; 'erik.rust@mail.house.gov'
Subject: Re: West Lake Landfill

Is this a Conference Call? Do you have a call in number.

From: Sanders, LaTonya [<mailto:Sanders.Latonya@epa.gov>]
Sent: Thursday, March 20, 2014 05:38 PM
To: Bond, Patrick (McCaskill); DeGregorio, Kerry (Blunt); Steven Engelhardt <steven.engelhardt@mail.house.gov>; Erik Rust <erik.rust@mail.house.gov>
Subject: West Lake Landfill

Good Afternoon,

Please be prepared for a brief call (5 mins.) from Karl Brooks, EPA Region 7 Administrator, tomorrow morning between 8:30 – 9 a.m. CST

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Friday, March 21, 2014 8:12 AM
To: 'Brecht Mulvihill'; 'Brendan Fahey'; 'Downey Palmer'; Edwilla Massey; Erik Rust; 'Joeana Middleton'; John Scates; Kerry DeGregorio; 'Lou Aboussie'; 'Mark Fowler'; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Nichole Distefano; Patrick Bond; Pauline Jamry; Steven Engelhardt; 'Tod Martin'
Subject: EPA Response to Missouri Attorney General re: West Lake Landfill
Attachments: AG-Letter.pdf

Good Morning,

Attached is the response to the Missouri Attorney General re: West Lake Landfill.

Thanks.

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
11201 RENNER BOULEVARD
LENEXA, KS 66219

MAR 21 2014

OFFICE OF
THE REGIONAL ADMINISTRATOR

The Honorable Chris Koster
Attorney General of Missouri
P.O. Box 899
Jefferson City, MO 65102

Dear Mr. Koster:

I valued the opportunity to speak with you last week about the need to ensure continued protection of public health at the West Lake Superfund site through effective federal-state partnership. The State of Missouri and the Environmental Protection Agency have been using our respective regulatory and oversight powers to keep holding the responsible parties to their duties: controlling the SSE at Bridgeton Sanitary Landfill, separating the West Lake Landfill from the SSE, and completing selection and implementation of a protective long-term Superfund remedy at West Lake.

As we discussed, Region 7's team of experts continues taking several decisive actions at the West Lake Superfund site. The EPA intends soon to conclude an agreement with the United States Army Corps of Engineers to enlist Corps construction expertise for the isolation barrier to separate West Lake from the SSE. I will keep you and the Missouri Department of Natural Resources closely informed about the status of this project. And I concur with your recommendation that you and I promptly take that opportunity to inform the community about isolation barrier construction activities before they begin.

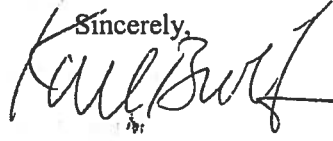
EPA's jurisdiction under the Comprehensive Environmental Response, Compensation, and Liability Act, also known as Superfund, covers release of hazardous substances wherever they have come to be located. EPA is committed to taking actions that compel the West Lake/Bridgeton PRPs to bear the costs legally required to contain and manage radiologically impacted material (RIM) resulting from the disposal of leached barium sulfate, regardless of where it is located at the site.

EPA's jurisdiction extends to wherever hazardous substances are located within the landfill complex. We will of course, closely cooperate with your office and the MDNR to align CERCLA work with PRP duties compelled by your Order at Bridgeton. I assure you that EPA work at the West Lake/Bridgeton NPL site will respect state authority while ensuring consistent site evaluations and appropriate allocation of federal and state responsibilities.

The Order your Office established in the Circuit Court of St. Louis County exercised State environmental-protection authorities which EPA considers complementary to our CERCLA powers. The State's lead in compelling the PRPs to control the subsurface smoldering event better enables this agency to compel the PRPs to isolate Bridgeton's SSE from West Lake. I believe that continuing to coordinate state and federal work will best accomplish our mutual goal to keep the public protected from environmental contaminants and nuisances, no matter their origin within the NPL site.



We will continue to coordinate and communicate with you and your colleagues in the State of Missouri as we work to accomplish our shared goal of protecting the health of all Missourians.

Sincerely,


Karl Brooks

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Friday, March 21, 2014 8:13 AM
To: 'Brecht Mulvihill'; 'Brendan Fahey'; 'Downey Palmer'; Edwilla Massey; Erik Rust; 'Joeana Middleton'; John Scates; Kerry DeGregorio; 'Lou Aboussie'; 'Mark Fowler'; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Nichole Distefano; Patrick Bond; Pauline Jamry; Steven Engelhardt; 'Tod Martin'
Subject: EPA Region 7 Press Release: EPA Regional Administrator Brooks Responds to Missouri Attorney General Koster on West Lake Landfill Site
Importance: High

U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd., Lenexa, Kansas 66219

Iowa, Kansas, Missouri, Nebraska, and Nine Tribal Nations

EPA Regional Administrator Brooks Responds to Missouri Attorney General Koster on West Lake Landfill Site

Contact Information: Chris Whitley, 913-551-7394, whitley.christopher@epa.gov

Environmental News

FOR IMMEDIATE RELEASE

(Lenexa, Kan., March 21, 2014) – EPA Regional Administrator Karl Brooks today sent the following letter to Missouri Attorney General Kris Koster:

March 21, 2014

The Honorable Kris Koster
Attorney General of Missouri
P.O. Box 899
Jefferson City, MO 65102

Dear Mr. Koster:

I valued the opportunity to speak with you last week about the need to ensure continued protection of public health at the West Lake Superfund site through effective federal-state partnership. The State of Missouri and the Environmental Protection Agency have been using our respective regulatory and oversight powers to keep holding the responsible parties to their duties: controlling the SSE at Bridgeton Sanitary Landfill, separating the West Lake Landfill from the SSE, and completing selection and implementation of a protective long-term Superfund remedy at West Lake.

As we discussed, Region 7's team of experts continues taking several decisive actions at the West Lake Superfund site. The EPA intends soon to conclude an agreement with the United States Army Corps of Engineers to enlist Corps construction expertise for the isolation barrier to separate West Lake from the SSE. I will keep you and the Missouri Department of Natural Resources closely informed about the status of this project. And I concur with your recommendation that you and I promptly take that opportunity to inform the community about isolation barrier construction activities before they begin.

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EPA's jurisdiction extends to wherever hazardous substances are located within the landfill complex. We will of course, closely cooperate with your office and the MDNR to align CERCLA work with PRP duties compelled by your Order at Bridgeton. I assure you that EPA work at the West Lake/Bridgeton NPL site will respect state authority while ensuring consistent site evaluations and appropriate allocation of federal and state responsibilities.

The Order your Office established in the Circuit Court of St. Louis County exercised State environmental-protection authorities which EPA considers complementary to our CERCLA powers. The State's lead in compelling the PRPs to control the subsurface smoldering event better enables this agency to compel the PRPs to isolate Bridgeton's SSE from West Lake. I believe that continuing to coordinate state and federal work will best accomplish our mutual goal to keep the public protected from environmental contaminants and nuisances, no matter their origin within the NPL site.

We will continue to coordinate and communicate with you and your colleagues in the State of Missouri as we work to accomplish our shared goal of protecting the health of all Missourians.

Sincerely,

Karl Brooks

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Learn more about the West Lake Landfill Site:

http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

Learn more about EPA Region 7: <http://www.epa.gov/aboutepa/region7.html>

Connect with EPA Region 7 on Facebook: <http://www.facebook.com/eparegion7>

Sanders, LaTonya

From: Sanders, LaTonya
Sent: Monday, March 24, 2014 5:34 PM
To: 'Brecht Mulvihill'; 'Brendan Fahey'; 'Downey Palmer'; Edwilla Massey; Erik Rust; 'Joeana Middleton'; John Scates; Kerry DeGregorio; 'Lou Aboussie'; 'Mark Fowler'; Mary Beth Wolf; Mattie Moore; Miriam Stonebraker; Nichole Distefano; Patrick Bond; Pauline Jamry; Steven Engelhardt; 'Tod Martin'
Subject: West Lake Update
Attachments: 140324-West Lake Update-FINAL.pdf

Hello:

EPA Region 7 has created the West Lake Update in an effort to inform the community about the progress of environmental activities taking place at the West Lake Landfill Superfund Site in Bridgeton, Mo.

The information about the West Lake Update is also being shared with other elected officials, the Community Advisory Group, Missouri Coalition for the Environment and other stakeholders.

<http://www.scribd.com/doc/214293564/West-Lake-Update-March-24-2014>

We plan to provide routine updates which can be found at the links below. I will email you each time we have a new update.

http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

<http://www.facebook.com/eparegion7>

<http://www.twitter.com/eparegion7>

<http://www.scribd.com/eparegion7>

The October 2013 Ground Water Monitoring Report can be found on the West Lake webpage under Site Documents at:

http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

The direct link to the report can be found at: http://www.epa.gov/region7/cleanup/west_lake_landfill/pdf/west-lake-gw-monitoring-oct-2013.pdf

LaTonya E. Sanders
Congressional Liaison

U.S. Environmental Protection Agency, Region 7
Office of the Regional Administrator
Office of Public Affairs
11201 Renner Boulevard
Lenexa, Kansas 66219

Office: 913-551-7555
BlackBerry: 913-387-7548
Email: sanders.latonya@epa.gov



West Lake Update

March 24, 2014

EPA publishes West Lake Update to keep the public informed about the West Lake Landfill Site in Bridgeton, Mo.

From Karl Brooks, Regional Administrator: EPA Enlists Army Corps Expertise

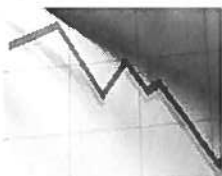
The U.S. Army Corps of Engineers has an expression: "One Team, One Fight." That's a principle we live by when it comes to the West Lake Landfill Site. EPA, the St. Louis area Congressional delegation and the Missouri Attorney General are in agreement that this site requires a team of the best people. This is why I have been in discussions with the Army Corps to enlist their construction management expertise for the isolation barrier to separate the Radiologically Impacted Material from the subsurface smoldering event at Bridgeton Landfill. I'm hopeful construction on the isolation barrier can begin shortly.

Attorney General Chris Koster's letter highlights that shared commitment to protect public health, and we are working to ensure continued close collaboration at the site between the state and federal partners. The complementary regulatory authorities held by the State and EPA will continue to hold the responsible parties to their duties.

EPA's legal authority under Superfund provides the authority to compel the potentially responsible parties to take the actions that are required to protect public health. What's more, EPA has the responsibility to protect the public no matter where the RIM, resulting from the disposal of leached barium sulfate, may be located at the site.

We will continue to share new information on our progress as our plans come together.

EPA Releases Fourth GW Monitoring Report



The fourth round of groundwater sampling data is now available online at http://www.epa.gov/region7/cleanup/west_lake_landfill/index.htm.

This round of data is generally consistent with the previous three rounds of groundwater sampling. Of particular note this round is the inclusion of eight recently added deep bedrock sampling wells at the southern portion of the site.

These eight sampling wells were not drilled as part of EPA's engineering survey. Rather, they were installed because the Missouri Department of Natural Resources wanted Republic Services to sample for benzene

in groundwater in an area adjacent to the Bridgeton Sanitary Landfill. Working under EPA's oversight, Republic's contractor used the same wells to conduct additional sampling for radionuclides and other analytes, and added those to the fourth quarterly groundwater sampling report submitted to EPA. The sampling results do not change EPA's approach to managing the site, and do not indicate an increased risk of exposure to the public.

Meet EPA's West Lake Team

Ron Hammerschmidt has served as Director of EPA Region 7's Environmental Services Division since February 2008. The activities of the Division include environmental assessment and monitoring, field compliance activities, quality assurance and operation of the regional laboratory.



Ron Hammerschmidt

These activities support the implementation of a broad range of environmental protection programs by the Regional Office. From January 1995 until he joined EPA, Dr. Hammerschmidt was Director of the Kansas Department of Health and Environment's Division of Environment. He began his service with KDHE in March 1980. He received his graduate degree in Chemistry from the University of Nebraska-Lincoln in August 1978.

Dr. Hammerschmidt served as the President of the Environmental Council of States (ECOS) in 2001-2002. He also served as the President of the Board of Directors for the Environmental Research Institute of States which provides research and education support for ECOS including the Interstate Technology and Regulatory Council (ITRC). Dr. Hammerschmidt received the ECOS 2008 Founders Award for his contributions and efforts on behalf of state environmental programs. Ron serves as the Region 7 liaison with EPA's Office of Research and Development (ORD). ORD is currently working with EPA Region 7 in a number of scientific areas related to the West Lake Site.



Community Inquiries:

Ben Washburn

913-551-7364

Washburn.Ben@epa.gov

Find Us On

www.epa.gov/region7/cleanup/west_lake_landfill/index.htm

www.facebook.com/eparegion7

[www.twitter.com/eparegion7](https://twitter.com/eparegion7)

www.scribd.com/eparegion7

Distefano, Nichole

From: Distefano, Nichole
Sent: Tuesday, September 03, 2013 6:35 PM
To: stephen_hedger@mccaskill.senate.gov
Subject: West Lake Landfill Remedy Cost Info
Attachments: Supplemental Feasibility Study - West Lake Landfill OU-1 12-28-11 Table 10.pdf; West Lake final SFS briefing.pdf

Steve –

Per our conversation last week I am sending along some cost data for you to absorb on Westlake landfill scenarios. The Feasibility study and our power point on the Feasibility study.

The Supp Feas Study, Table 10 (pages 1-7), contains a detailed breakout of the costs and time EPA calculated to complete for cap in place, excavate/remove, excavate and replace in new cell at West Lake. Page 7 tabulates the costs: \$41 million for cap in place; \$137 million for excavate/replace; and \$260-\$415 million for excavate/remove.

In the briefing slides, slides 20 and 21 outline the cap in place costs and remedy technique; slide 22 outlines the excavate/remove costs and time; and slide 27 outlines the excavate/replace costs and time. Slide 29 compares all three proposals.

It is important to note that the costs of all remedies would be ultimately charged to the potential responsible parties (PRPs). However, the Region has determined that it is unlikely the PRPs will willingly incur the excavate/removal option, which will dramatically increase the time to complete that remedy because the monies in the Superfund would have to cover the costs while the agency litigates against the PRPs to force their hand in paying for this option. Region 7 estimates that the excavate/removal option, if funded through Superfund during litigation, would take over 40 years and ultimately cost \$415 million given the current rate of funding provided to the Superfund.

I think Mark may be set to meet with the Region on this sometime next week (and conference in Mattie and Jo). I don't know that the original request for the briefing included a request on the costs of the different scenarios. But let me know if you want us to include it and we will.

Nichole Distefano
Acting Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

Table 10: Comparative Analysis of Alternatives

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Threshold Criteria			
Overall Protection of Human Health and the Environment	All of the alternatives would be protective of human health and the environment. All alternatives eliminate or reduce potential exposures to (1) external gamma radiation, (2) radon emissions, (3) inhalation or ingestion of contaminated soil or wastes, (4) dermal contact with contaminated soil or waste, and (5) dispersal of contaminants in fugitive dust. All of the alternatives would reduce potential infiltration of precipitation into the waste and thereby reduce the potential for leaching to groundwater. All alternatives include institutional controls to ensure that only land and resource uses that are consistent with the remedy and protective of human health and the environment are allowed in the future.		
Compliance with ARARs	All of the alternatives would comply with chemical-specific ARARs including (1) uranium mill tailing standards for radon emissions, maximum concentrations for groundwater protection, and cleanup of contaminated land (Buffer Zone and Crossroad Property), (2) radon NESHAP, (3) Missouri radiation protection standards, and (4) Missouri maximum contaminant levels (MCLs).		
Compliance with Location-Specific ARARs	Would meet location-specific ARARs including solid waste regulation standards relative to 100-year floodplain and proximity to airport runways.	Would meet location-specific ARARs including solid waste regulation standards relative to 100-year floodplain and proximity to airport runways.	Would meet location-specific ARARs including solid waste regulation site selection standards relative to airport runways, 100-year floodplain, wetlands, seismic zones, and unstable ground. May not meet all FAA requirements (TBCs) relative to airport runways because location of on-site cell is within 8,000 feet of end of westernmost runway at Lambert-St. Louis International Airport.
Compliance with Action-Specific ARARs	Would meet action-specific ARARs including Missouri solid waste regulations closure and post-closure standards and uranium mill tailing standards for longevity of disposal facilities.	Would meet action-specific ARARs including Missouri solid waste regulation closure and post-closure standards, DOT and NRC standards for shipment of radioactive wastes, and disposal facility waste acceptance criteria.	Would meet action-specific ARARs including Missouri solid waste regulations for design, operation, closure and post-closure of a solid waste landfill and uranium mill tailing standards for longevity of disposal facilities. Would NOT comply with Missouri solid waste prohibition on disposal of radioactive contaminated material in solid waste disposal cell.

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria			
Long-Term Effectiveness and Permanence			
Magnitude of residual risks	Highest long-term risk that would remain upon completion of the remedial action (1.3×10^{-6}) is within EPA's target risk range of 1×10^{-6} to 1×10^{-4} .	Highest long-term risk that would remain upon completion of the remedial action ($<1 \times 10^{-7}$) is less than EPA's target risk range of 1×10^{-6} to 1×10^{-4} .	Highest long-term risk that would remain upon completion of the remedial action (1.5×10^{-6}) is within EPA's target risk range of 1×10^{-6} to 1×10^{-4} .
Adequacy and reliability of controls	Engineering measures including construction, inspection and maintenance of a final cover would be the primary methods used to control waste materials that remain on site. These types of measures have been demonstrated to be effective at numerous solid waste and NCP sites. Conceptual design of the new landfill covers is based on established designs for solid waste disposal sites, augmented to limit increased gamma radiation and radon emissions expected to occur over a 1,000 period from decay of thorium. Includes rip-rap armor along toe of Area 2 to provide protection against flooding in the unlikely event of failure of the Earth City Flood Control levees or stormwater management systems. Engineering measures would be augmented and supported by existing and additional institutional controls which also have been used at numerous solid waste and NCP sites.	Includes excavation and removal of radiologically-impacted materials above levels which would allow for unrestricted use relative to radiological contamination to an off-site disposal site, and thus is potentially more reliable than the other alternatives. Engineering measures including construction, inspection and maintenance of a final cover would be the primary methods used to control waste materials that remain on site. These types of measures have been demonstrated to be effective at numerous solid waste and NCP sites. Engineering measures would be augmented and supported by existing and additional institutional controls which also have been used at numerous solid waste and NCP sites.	Engineering measures including construction and closure of a new engineered waste disposal cell and construction, inspection and maintenance of a final cover would be the primary methods used to control waste materials that remain on site. These types of measures have been demonstrated to be effective at numerous solid waste and NCP sites. Engineering measures would be augmented and supported by existing and additional institutional controls which also have been used at numerous solid waste and NCP sites. Conceptual design of the new landfill cell is based on established designs for solid waste disposal sites, augmented to limit increased gamma radiation and radon emissions expected to occur over a 1,000 period from decay of thorium.

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Reduction of Toxicity, Mobility or Volume through Treatment	None of the alternatives include treatment technologies that would reduce the toxicity, mobility or volume of waste material through treatment as a primary component. Treatment technologies are generally not applicable to the site wastes due to the nature and overall large volume of wastes, combined with the fact that radionuclides are naturally occurring elements that cannot be neutralized or destroyed by treatment. All of the alternatives include off-site treatment and disposal of hazardous wastes in accordance with the RCRA regulations if any such wastes are encountered during implementation of the remedy.		
Short-Term Effectiveness			
Protection of the community during any remedial action	Lowest potential for impacts to the community: Transportation accident incidence:0.61 Carcinogenic risk to residents:3.3x10 ⁻⁶ Carbon dioxide emissions: 8,350 tons	Highest potential for impacts to the community: Transportation accident incidence:1.4 Carcinogenic risk to residents:2.1x10 ⁻⁵ Carbon dioxide emissions: 35,400 tons	Lower potential for impacts to the community: Transportation accident incidence:0.79 Carcinogenic risk to residents:2.0x10 ⁻⁵ Carbon dioxide emissions: 17,900 tons
		Excavation of RIM would create depressions in the waste where precipitation could accumulate increasing the potential for infiltration, leaching and creation of a plume of contamination in groundwater.	Excavation of RIM would create depressions in the waste where precipitation could accumulate increasing the potential for infiltration, leaching and creation of a plume of contamination in groundwater.
	This alternative poses the least potential for increased bird strikes to aviation operations at nearby Lambert-St. Louis International Airport.	This alternative poses potential for increased bird strikes to aviation operations at nearby Lambert-St. Louis International Airport.	This alternative poses greatest potential for increased bird strikes to aviation operations at nearby Lambert-St. Louis International Airport.
Protection of workers during remedial actions	Lowest potential for impacts to workers Industrial accident incidence – 4.7 Carcinogenic risk – 7.2 x 10 ⁻⁵ Worker dose (TEDE) – 50 mrem/yr	Greater potential impacts to workers from increased handling of RIM Industrial accident incidence – 7.6 Carcinogenic risk – 7.6 x 10 ⁻⁴ Worker dose (TEDE) – 260 mrem/yr	Greater potential impacts to workers due to increased handling of RIM Industrial accident incidence – 9.0 Carcinogenic risk – 7.4 x 10 ⁻⁴ Worker dose (TEDE) – 260 mrem/yr
Environmental impacts of any remedial action	No measurable long-term impacts to plants or animals are expected to occur from any of the alternatives. No wetlands are present on-site and no endangered species were identified in the site area. Regrading and/or excavating Area 2 would disturb the landfill surface and destroy the habitat that currently exists in this area, but this would be replaced by vegetative cover equivalent to an early stage field succession.		

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Short-Term Effectiveness (cont.)			
Time until RAOs are achieved	Implementation of institutional controls is included as part of all of the alternatives and would take approximately 1 year to implement. Potential threats would be addressed upon implementation of institutional controls. No potential threats would remain after implementation of any of the alternatives. Note: NTP for entries below is notice to proceed with RD.	RAOs would be achieved upon completion of construction 4 yrs after NTP w/ no fiscal constraint 29 yrs after NTP if fiscal constraint	RAOs would be achieved upon completion of construction 6 yrs after NTP w/ no fiscal constraint 13 yrs after NTP if fiscal constraint
Implementability			
Technical Feasibility	All of the alternatives are constructible.		
		<p>There is uncertainty regarding the actual volumes of RIM that would need to be removed and the volume of daily cover that would be added resulting in uncertainty the actual disposal volume. The ability to remove deeper occurrences of RIM from Area 2 is a technical difficulty with this alternative and might result in schedule delays. The ability to locate a rail spur near the site or to construct a rail spur to and on the site is a technical difficulty that could limit the performance and schedule of this alternative. Reductions in the number of rail cars or the frequency of exchange of full and empty rail cars could impact the schedule for this alternative.</p>	<p>There is uncertainty regarding the actual volumes of RIM that would need to be removed and the volume of daily cover that would be added resulting in uncertainty the actual disposal volume. The ability to remove deeper occurrences of RIM from Area 2 is a technical difficulty with this alternative that might result in schedule delays. Construction and operation of a new engineered disposal cell is a common technology that has been demonstrated to be reliable. Only one possible location for a new disposal cell could be identified due to the Missouri river geomorphic floodplain. Subsurface conditions at this location are unknown and could affect technical feasibility and/or capacity of a new disposal cell.</p>

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Implementability (cont.)			
Technical Feasibility (cont.)	Landfill cover systems have been used extensively and with proper inspection and maintenance have been demonstrated to be reliable. Stormwater controls and environmental monitoring are commonly used techniques that have been demonstrated to be reliable.	Excavation and offsite disposal is a common and reliable technology. Landfill cover systems have been used extensively and with proper inspection and maintenance have been demonstrated to be reliable. Stormwater controls and environmental monitoring are commonly used and demonstrated reliable techniques. Per the FAA, the reliability of most bird mitigation technologies are questionable.	Landfill cover systems have been used extensively and with proper inspection and maintenance have been demonstrated to be reliable. Stormwater controls and environmental monitoring are commonly used and demonstrated reliable techniques. Per the FAA, the reliability of most bird mitigation technologies are questionable.
	The only future actions anticipated to be required for all of the alternatives are ongoing inspection, monitoring, maintenance and, if needed, repair of the final landfill covers which should be easily implemented. All of the alternatives include a provision for a contingent landfill gas control system in the event the monitoring of subsurface occurrences of landfill gas or radon indicates a need for such a system.		
Administrative Feasibility	Performance of all the alternatives can be monitored and potential risk of exposure in the event of failure of any of the alternatives would be low. Requires coordination and permitting with MSD for disposal of leachate and stormwater during construction. Requires access to Crossroad Property for investigation/removal of soil. Requires coordination with Earth City Flood Control district for design and operation of long-term stormwater management systems. May require preparation and approval of a traffic control plan for St. Charles Rock Road.	Implementation would require approval and verification of current acceptability for off-site disposal from EPA. Use of the Clean Harbors facility for disposal would require approval by the Rocky Mountain Low Level Radioactive Waste Compact. Construction of a rail spur would require leasing/acquisition of property located on the east side of St. Charles Rock Rd. and permission to construct a rail crossing over St. Charles Rock Rd.	Requires approval of City of St. Louis (unlikely based on prior discussions) to temporarily remove its Negative Easement and Restrictive Covenant against additional landfilling at the site and resultant impacts to airport safety. Requires coordination with and possible approval by the FAA for construction and operation a new disposal cell within 10,000 ft of the end of the westernmost runway at Lambert-St. Louis International Airport.

Table 10: Comparative Analysis of Alternatives (continued)

Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Implementability (cont.)			
Administrative Feasibility (cont.)		<p>Requires coordination and permitting with MSD for disposal of leachate and stormwater during construction.</p> <p>Requires access to Crossroad Property for investigation/removal of soil.</p> <p>Requires coordination with Earth City Flood Control district for design and operation of long-term stormwater management systems.</p> <p>May require development and approval of a traffic control plan for St. Charles Rock Road.</p>	<p>Requires MDNR approval to construct haul roads over previously closed portions of the permitted landfill.</p> <p>Requires coordination and permitting with MSD for disposal of leachate and stormwater during construction.</p> <p>Requires access to Crossroad Property for investigation/removal of soil.</p> <p>Requires coordination with Earth City Flood Control district for design and operation of long-term stormwater management systems.</p> <p>May require preparation and approval of a traffic control plan for St. Charles Rock Road.</p>
Availability of Services and Materials	<p>Preliminary discussions with MSD indicate that it is willing and has sufficient capacity to accept leachate or stormwater that may be generated during construction. Alternatively, off-site disposal facilities are available to accept these materials if necessary.</p>	<p>Only 2 or possibly 3 off-site disposal facilities are available that could accept the types of wastes in Areas 1 and 2.</p> <p>Preliminary discussions with MSD indicate that it is willing and has sufficient capacity to accept leachate or stormwater that may be generated during construction. Alternatively, off-site disposal facilities are available to accept these materials if necessary.</p>	<p>Preliminary discussions with MSD indicate that it is willing and has sufficient capacity to accept leachate or stormwater that may be generated during construction and leachate that may accumulate in the new on-site disposal cell. Alternatively, off-site disposal facilities are available to accept these materials if necessary.</p>
Adequate equipment, materials, and specialists necessary to implement this alternative are anticipated to be available.			

Table 10: Comparative Analysis of Alternatives (continued)

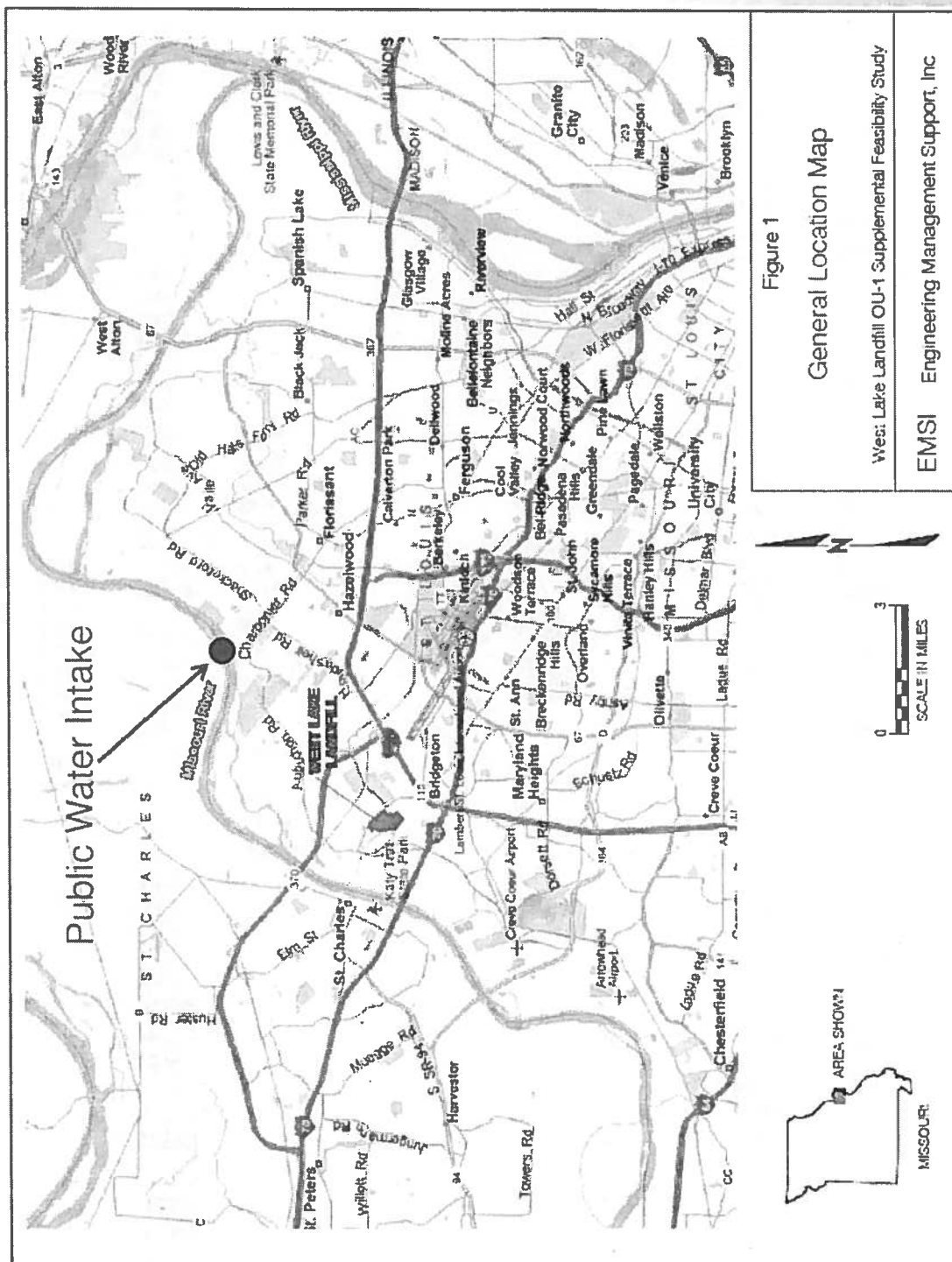
Evaluation Criteria	ROD-Selected Remedy	"Complete Rad Removal" with Off-site Disposal	"Complete Rad Removal" With On-site Disposal
Primary Balancing Criteria (cont.)			
Implementability (cont.)			
Availability of Services and Materials (cont.)	Technologies included as part of this alternative are generally available and sufficiently demonstrated. No prospective technologies are anticipated as part of this alternative.	Technologies included as part of this alternative are generally available and sufficiently demonstrated. No prospective technologies are anticipated as part of this alternative. Use of physical separation techniques could, if effective, reduce the overall cost of this alternative; however, the potential effectiveness, implementability, risks and cost of such techniques cannot be determined from available information. An on-site pilot-scale test would be necessary to make such determinations.	Technologies included as part of this alternative are generally available and sufficiently demonstrated. No prospective technologies are anticipated as part of this alternative.
Cost			
Capital cost	\$41,400,000	\$259,000,000 - \$415,000,000	\$117,000,000
O&M costs	\$42,000 - \$414,000	\$40,000 - \$412,000	\$52,000 - \$604,000
Total costs (30 years):			
No fiscal constraint			
Present worth	\$43,000,000	\$250,000,000 - \$401,000,000	\$112,000,000
Total (non-discounted)	\$45,000,000	\$262,000,000 - \$419,000,000	\$121,000,000
Fiscally constrained (\$10M/yr):			
Present worth	\$46,000,000	\$211,000,000 - <i>Not Estimated</i>	\$121,000,000
Total (non-discounted)	\$49,000,000	\$286,000,000 - <i>Not Estimated</i>	\$141,000,000

The cost estimates summarized above and provided elsewhere in this SFS are feasibility level cost estimates; that is, they were developed to a level of accuracy such that the actual costs incurred to implement the alternatives should fall within a range bounded by 50% above and 30% below these estimates.

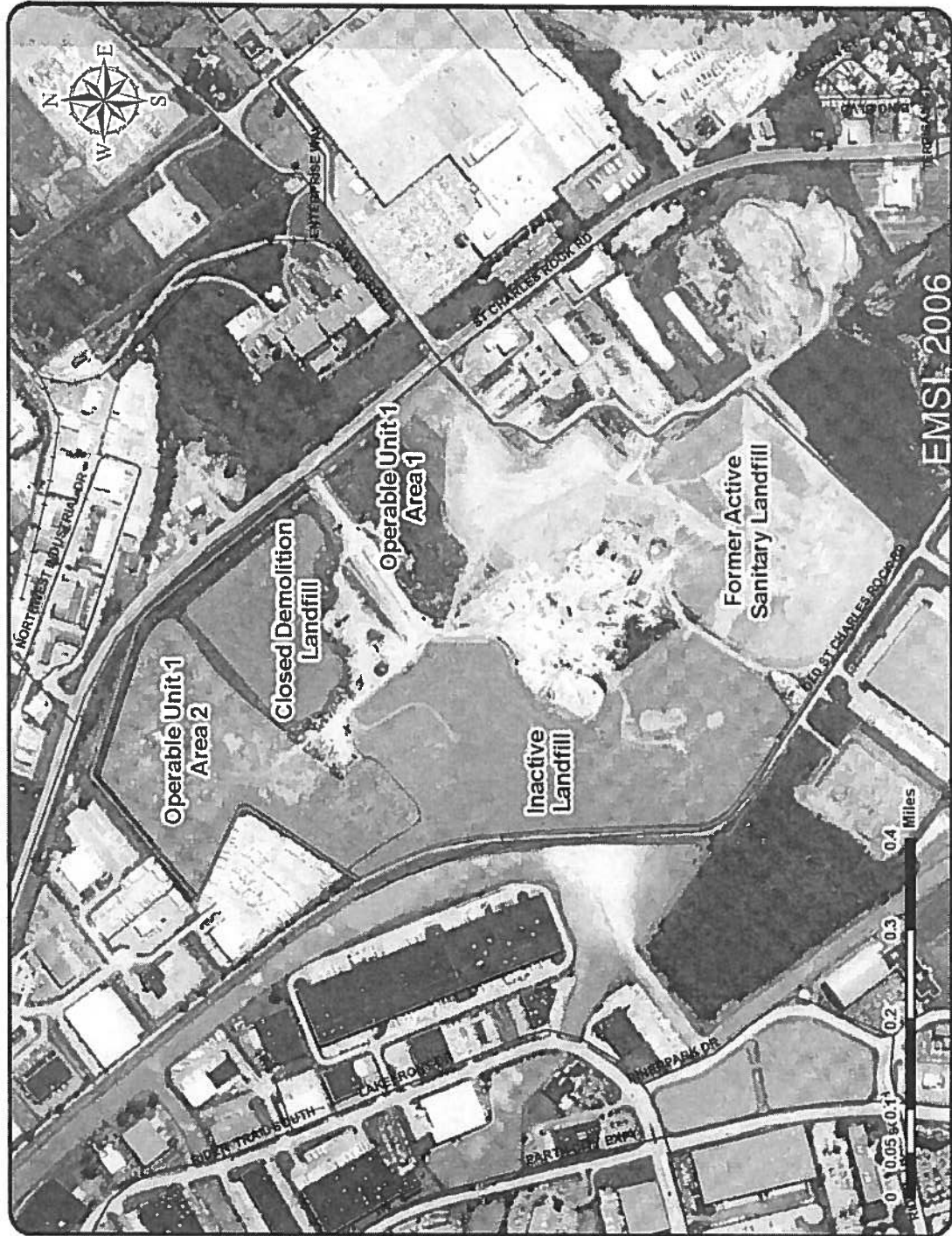
The West Lake Landfill OU-1 Supplemental Feasibility Study



Dan Gravatt
U.S. Environmental Protection Agency
Region 7



Site Boundaries



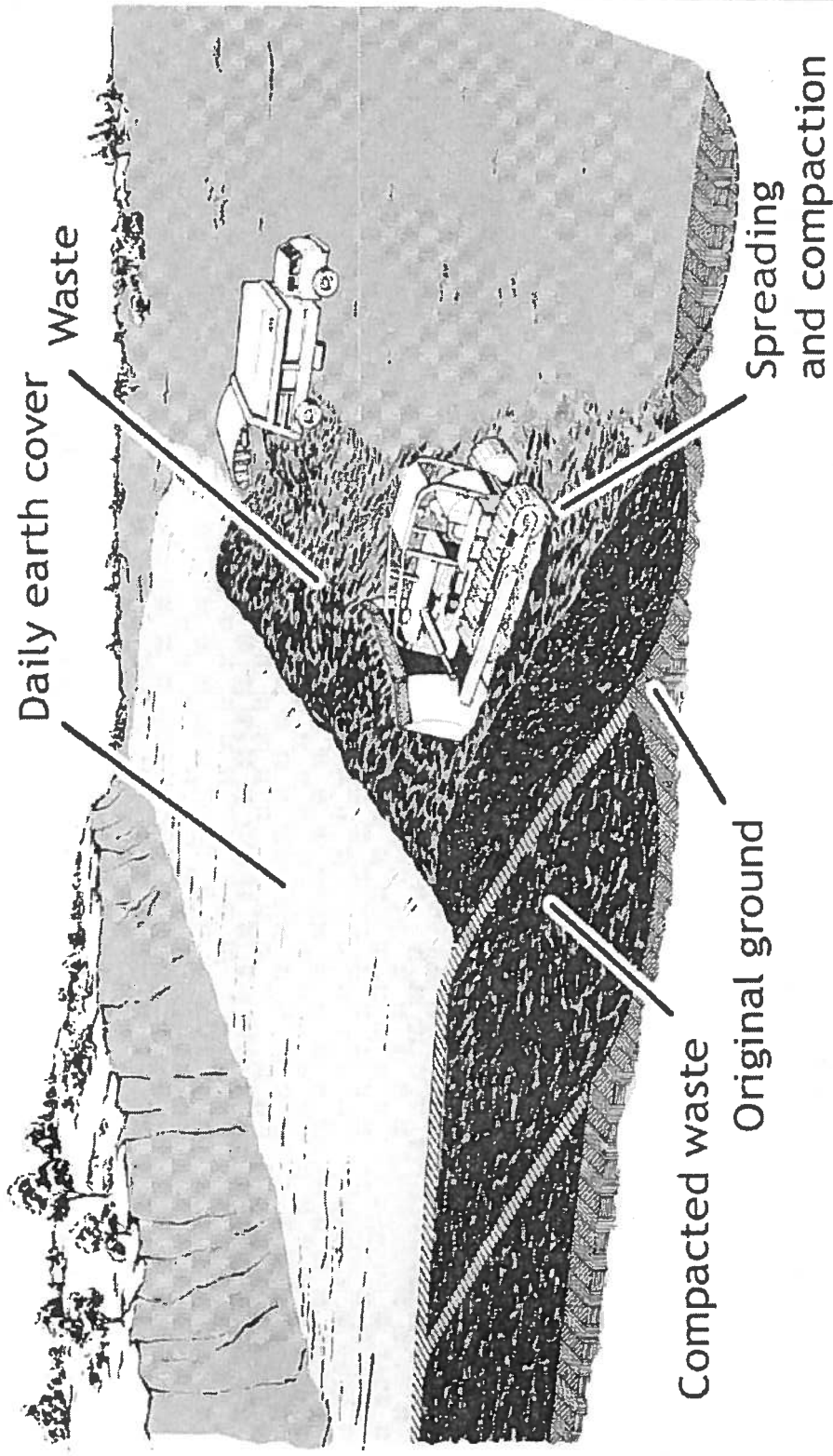
How West Lake Landfill became radiologically contaminated

- Manhattan Project work in St. Louis (Mallinckrodt)
- 8,700 tons leached barium sulfate cake (uranium 0.03% - 0.1%) left over after other, more valuable ore residues sent to Colorado for reprocessing
- Uranium concentrations and leach potential too low for commercial reprocessing
- Mixed with 39,000 tons of soil
- Given to the landfill and used as daily and intermediate cover at OU-1 Areas 1 and 2
- Contaminated soil was placed between July and October 1973

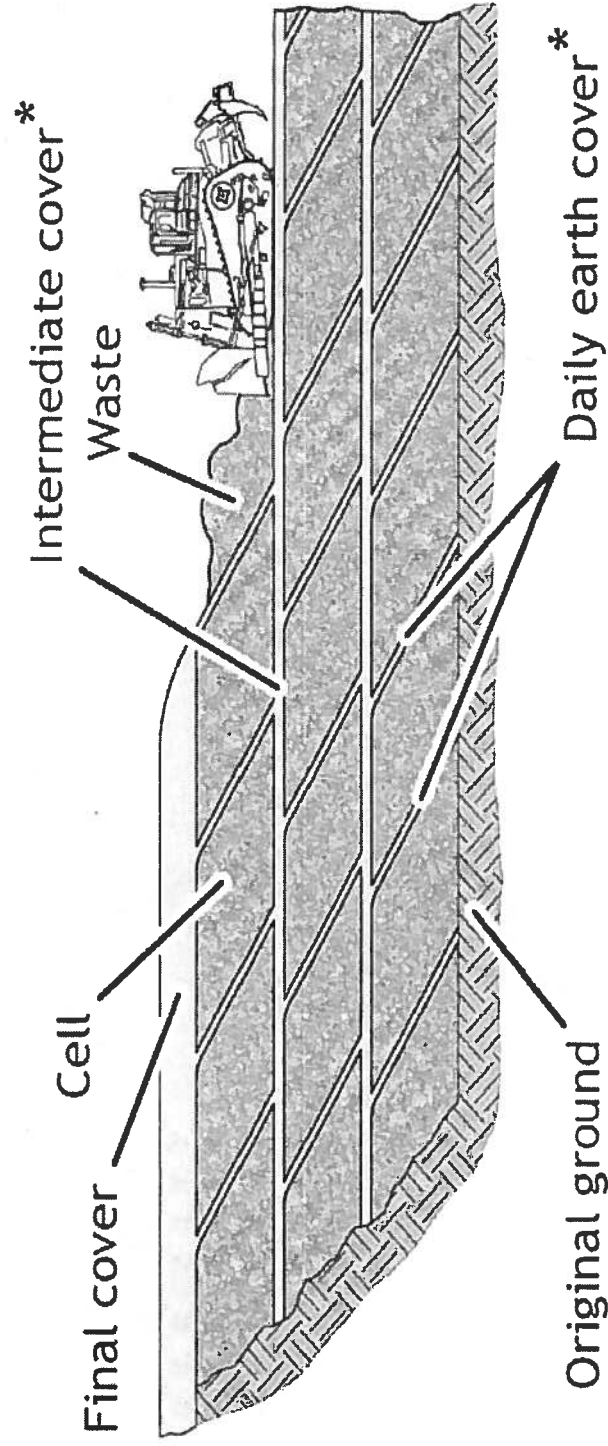
Site Areas – Operable Unit 1

- Radiological Areas 1 and 2 received municipal solid waste, construction/demolition debris, and industrial wastes
- Operated from approximately 1950 to 1974
- Buffer Zone/Crossroad Property (Ford Property) became radiologically contaminated by erosion from Area 2

GENERALIZED LANDFILL OPERATION

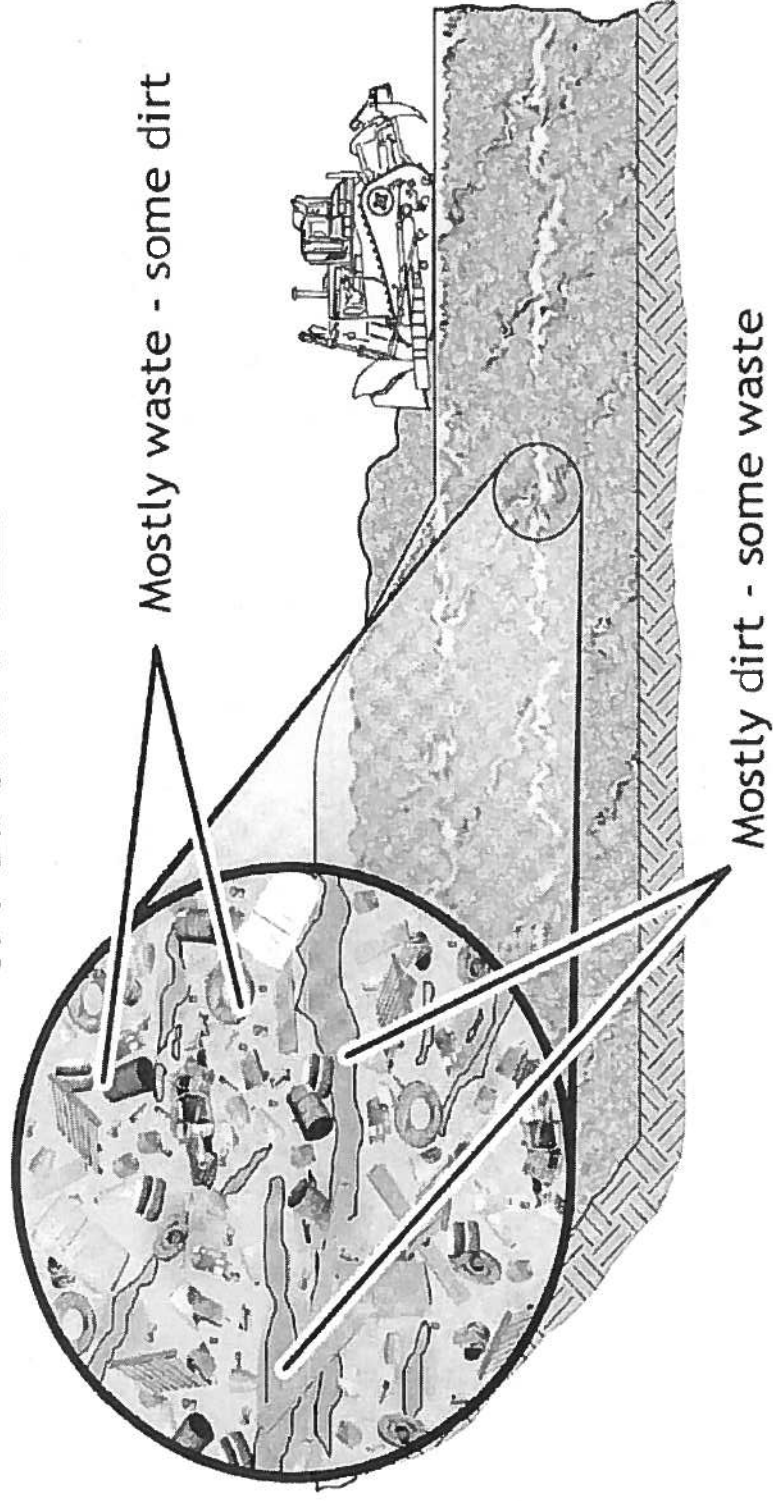


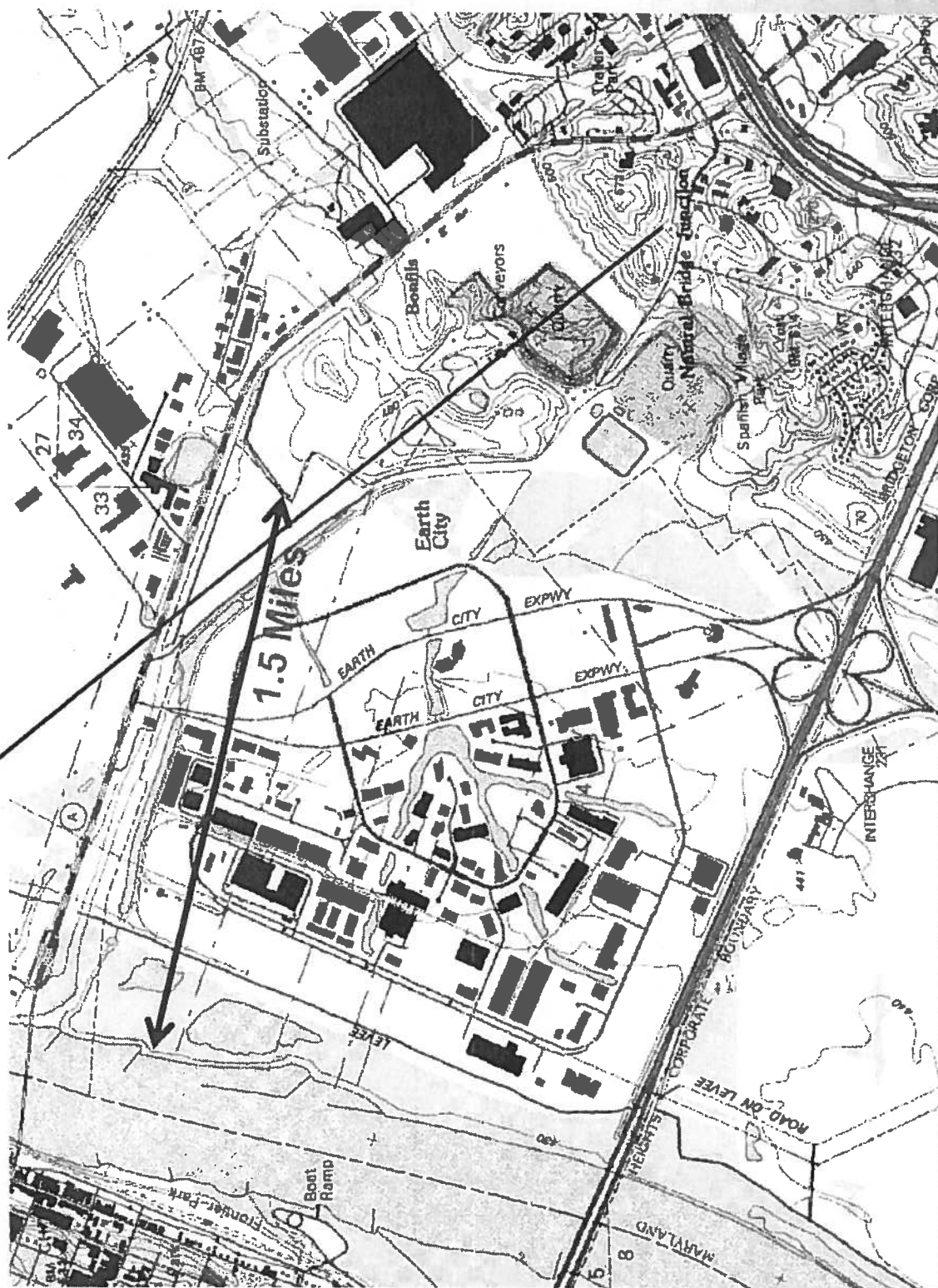
GENERALIZED LANDFILL CELL CONFIGURATION



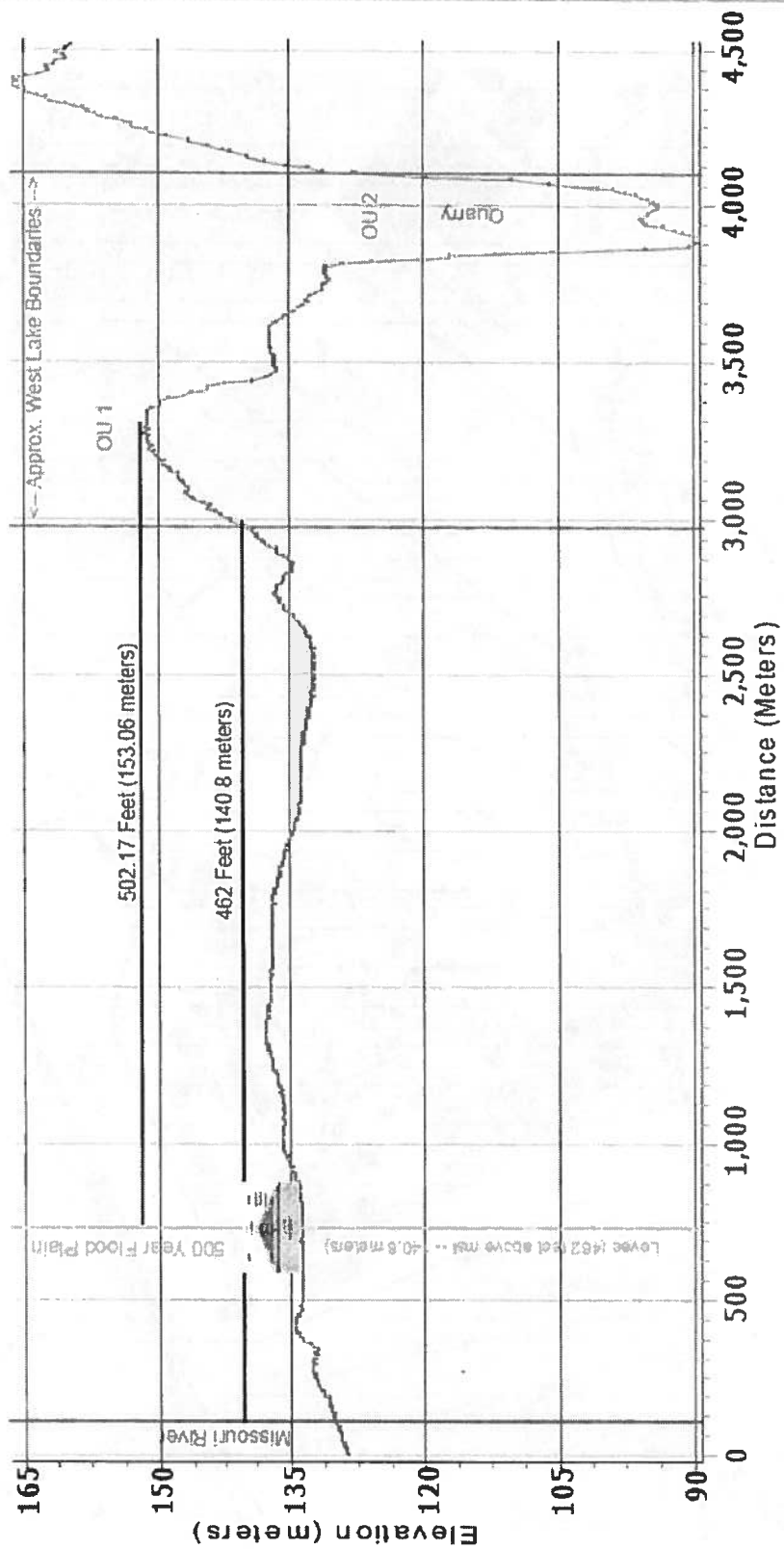
*Highly idealized soil layers. This configuration does not reflect mixing of soil with trash or distortion of soil layers by subsequent compaction and placement of additional fill.

TYPICAL MIXING OF WASTE AND DIRT IN LANDFILL

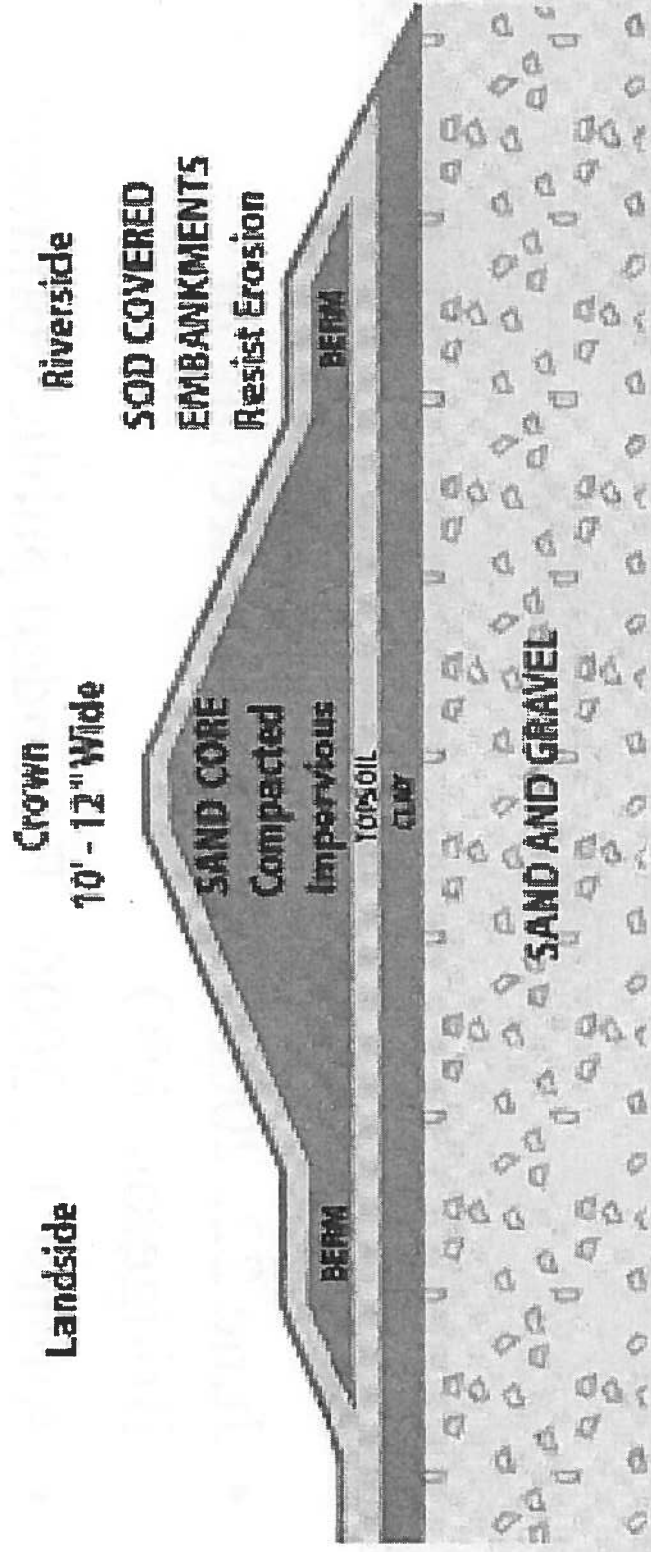




Transect 1



Cross Section of an Engineered Levee



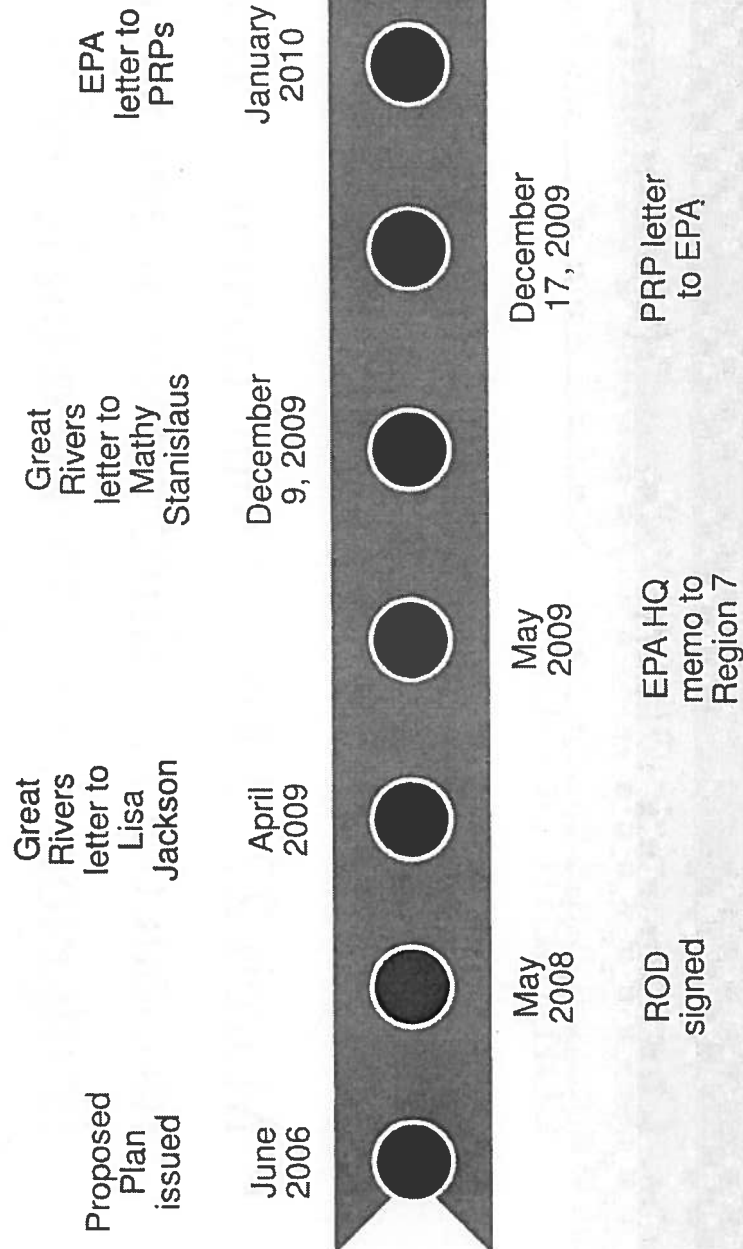
Community Involvement during ROD Process

- June 14, 2006: Proposed plan released, public comment period begins
- June 22, 2006: First public meeting in Bridgeton, MO
- August 14, 2006: Extended public comment period
- September 14, 2006: Second public meeting in Bridgeton, MO – focused on radiation issues

Community Involvement during ROD Process (cont'd)

- October 14, 2006: Second extension to public comment period
- December 29, 2006: Public comment period ends after more than 6 months
- March 27, 2008: Public comment period reopened and a third public meeting held in Bridgeton, MO – focused on levee issues
- April 9, 2008: Public comment period ends

The road to the SFS for OU-1



Remedies evaluated in the SFS

- The SFS re-evaluates the ROD remedy and the complete excavation and off-site disposal remedies *in greater detail* than was done in the original FS
- The SFS also includes an evaluation of complete excavation and on-site disposal of radiologically-contaminated material, at the request of EPA HQ
- No new investigation or sampling

Evaluation criteria for Remedies

- The NCP at 40 CFR 300.430 (e) (9) specifies nine criteria to use for the evaluation:

Two “Threshold” Criteria

Five “Primary Balancing” Criteria

Two “Modifying” Criteria

Evaluation Criteria (cont'd)

- “Threshold” Criteria:

1. Overall protection of human health and the environment

2. Compliance with ARARs

Evaluation Criteria (cont'd)

- “Primary Balancing” Criteria:

1. Long-term effectiveness and permanence
2. Reduction of toxicity, mobility or volume through treatment
3. Short-term effectiveness
4. Implementability
5. Cost

Evaluation Criteria (cont'd)

- “Modifying” criteria:

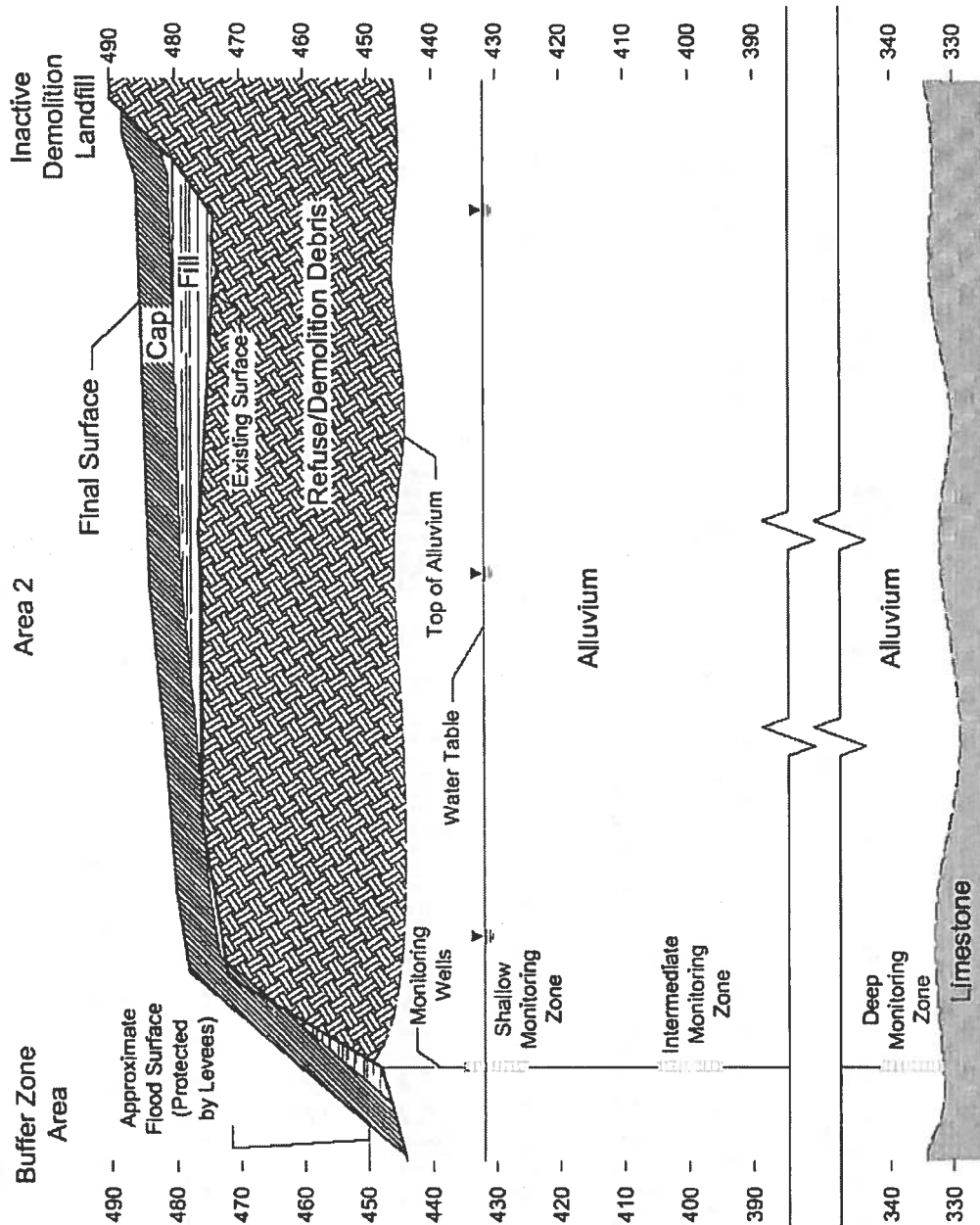
1. State Acceptance

2. Community Acceptance

Cap-in-Place (ROD Remedy)

- Meets “Threshold” and most “Primary Balancing” criteria
- Does not meet preference for treatment
- Is implementable and effective in short term and long term
- Costs \$41.4M
- 3 years to complete with unconstrained funding

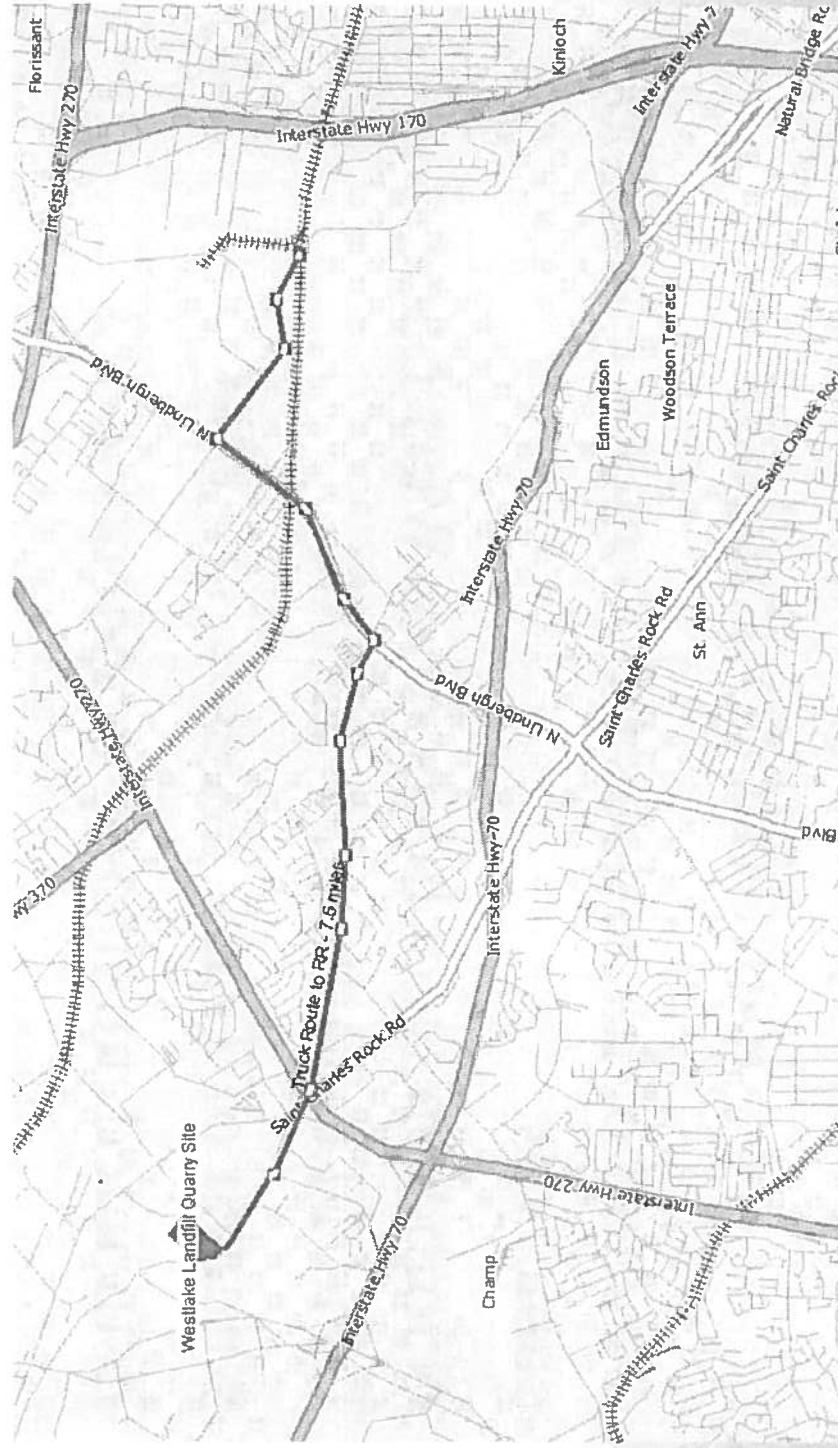
Cross section of Landfill and Cap



Excavation and Off-Site Disposal

- Meets “Threshold” and most “Primary Balancing” criteria
- Does not meet preference for treatment
- Is effective in the long term
- Has issues with short-term effectiveness
- Has issues with implementability
- Costs \$259M to \$415M
- 4 years to complete with unconstrained funding, 22-38 years if Fund-lead (\$10M per year)

Truck Route to RR Spur



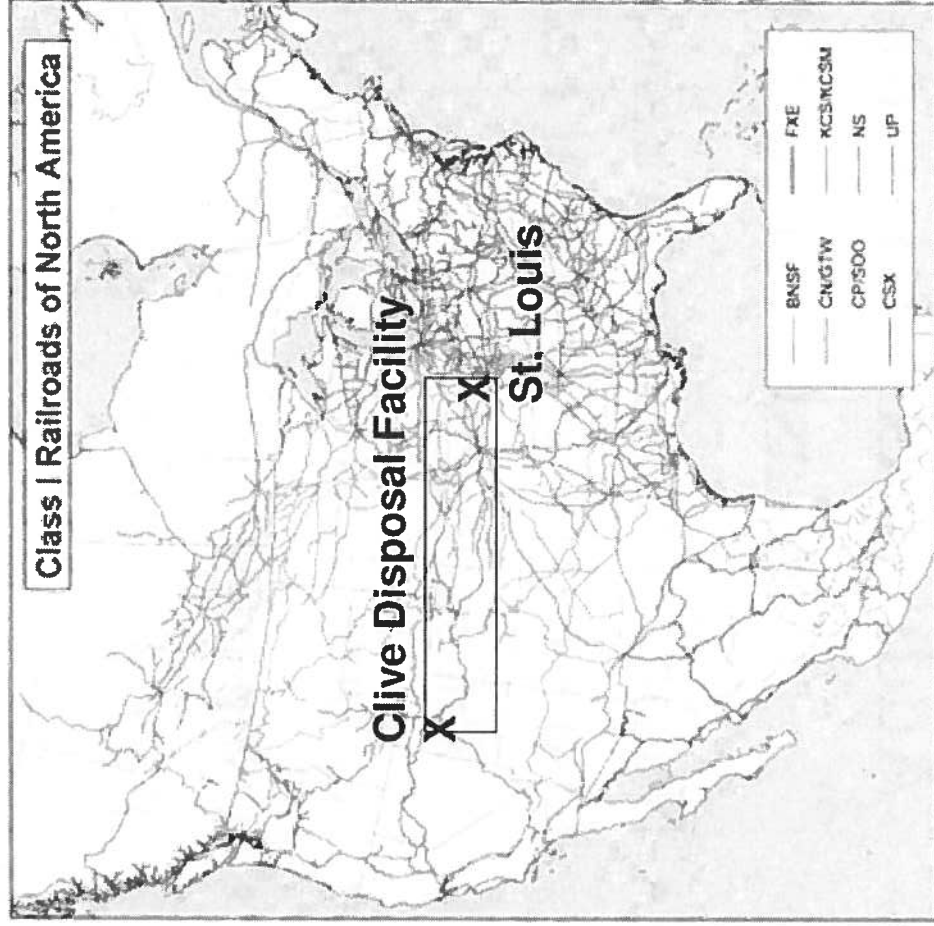
Transporting Waste from Landfill to Railcar

- Amount of hazardous fill to move = 440,000 cubic yds
- Number of truckloads from West Lake Landfill to railhead = 23,000
- Number of Truck miles = 345,000
- Estimated number of accidents = 1.3

*Assuming 3.8 accidents/1,000,000 truck miles

Class I Railroads of North America

- Limited number of railroads between St. Louis, MO and Salt Lake City, UT



Additional Risk with Transporting Waste on Rail to Utah

- Number of railcars to transport waste from St. Louis to Clive Disposal Facility = 5,750 railcars
- Assume 100 railcars/trainload = 57 trains
- Train miles = 180,000
- Risk of injury or death = 4

*one injury or death for every 42,720 train miles

Excavation and On-site Disposal

- Does not meet all “Threshold” criteria
- Meets most “Primary Balancing” criteria
- Does not meet preference for treatment
- Is effective in the long term
- Has issues with short-term effectiveness
- Has issues with implementability
- Costs \$137M
- 6 years to complete with unconstrained funding,
10 years if Fund-lead (\$10M per year)



Source: Google Earth

Figure 6

Setback From Airport Runway

West Lake Landfill OU-1 Supplemental Feasibility Study

EMSI Engineering Management Support, Inc.

Summary of Remedies

	Cap-in-Place	Excavation and Off-site Disposal	Excavation and On-site Disposal
Threshold Criteria	✓	✓	Does not meet all APARs
Balancing Criteria	✓	Short-term effectiveness and implementability issues	Short-term effectiveness and implementability issues
Time to Complete (Unconstrained)	Three years	Four years	Six years
Time to Complete (Fund-Lead)	Five years	22-38 years	Ten years
Cost	\$41.4M	\$259M to \$415M	\$137M

Note: None of the three remedies satisfy the preference for treatment.

Community Acceptance

- Great Rivers opposes the ROD remedy, wants excavation with off-site disposal
- Some members of public are on the record supporting the ROD remedy
- St. Louis Airport Authority opposes both excavation remedies
- St. Louis Aldermen passed a resolution calling for excavation with off-site disposal
- Water utility does not oppose ROD remedy

State Involvement

- State concurred on the ROD in 2008
- State letter to EPA dated May 4, 2009 suggesting use of ARRA funds to remove radiological contamination from the site and thereby create jobs
- State (Missouri DNR) has been fully involved in preparation of SFS work plan and SFS report from the beginning

State concerns with SFS

- Language allowing regrading under the ROD remedy vs. preliminary cap design in SFS
- Requests for additional sampling
- ARARs

Implementation Issues

- Noise, dust and vapor exposure for nearby residents and businesses
- Bird strike mitigation for aircraft
- Contaminant migration concerns
- Waste hauling/transportation issues
- Schedule and cost considerations
- Airport easement and FAA ROD
- Potential litigation

SFS Path Forward

- Briefings for EPA HQ, congressionals
- Final SFS report released to public, **not** for public comment
- Draft Decision Document (ESD, ROD amendment, or new ROD)
- Public Comment Period on the Decision Document and public availability session
- Final Remedy Selection

Contacts:

Dan Gravatt, Remedial Project Manager
913-551-7324
gravatt.dan@epa.gov

Debbie Kring, Community Involvement
Coordinator
913-551-7725
kring.debbie@epa.gov

Distefano, Nichole

From: Distefano, Nichole
Sent: Wednesday, September 04, 2013 10:46 AM
To: Hedger, Stephen (McCaskill); Bond, Patrick (McCaskill)
Subject: RE: West Lake Landfill Remedy Cost Info

Yep. I am happy to chat. Pat give me a call 202-564-1110.

Nichole Distefano
Acting Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

From: Hedger, Stephen (McCaskill) [mailto:Stephen_Hedger@mccaskill.senate.gov]
Sent: Wednesday, September 04, 2013 10:22 AM
To: Distefano, Nichole; Bond, Patrick (McCaskill)
Subject: RE: West Lake Landfill Remedy Cost Info

Thank you!!!

Looping Pat, who started yesterday.

It may be good for you two to chat, both about this and perhaps a broader debrief on the office/portfolio if you guys have time.

From: Distefano, Nichole [<mailto:DiStefano.Nichole@epa.gov>]
Sent: Tuesday, September 03, 2013 6:35 PM
To: Hedger, Stephen (McCaskill)
Subject: West Lake Landfill Remedy Cost Info

Steve –

Per our conversation last week I am sending along some cost data for you to absorb on Westlake landfill scenarios. The Feasibility study and our power point on the Feasibility study.

The Supp Feas Study, Table 10 (pages 1-7), contains a detailed breakout of the costs and time EPA calculated to complete for cap in place, excavate/remove, excavate and replace in new cell at West Lake. Page 7 tabulates the costs: \$41 million for cap in place; \$137 million for excavate/replace; and \$260-\$415 million for excavate/remove.

In the briefing slides, slides 20 and 21 outline the cap in place costs and remedy technique; slide 22 outlines the excavate/remove costs and time; and slide 27 outlines the excavate/replace costs and time. Slide 29 compares all three proposals.

It is important to note that the costs of all remedies would be ultimately charged to the potential responsible parties (PRPs). However, the Region has determined that it is unlikely the PRPs will willingly incur the excavate/removal option,

which will dramatically increase the time to complete that remedy because the monies in the Superfund would have to cover the costs while the agency litigates against the PRPs to force their hand in paying for this option. Region 7 estimates that the excavate/removal option, if funded through Superfund during litigation, would take over 40 years and ultimately cost \$415 million given the current rate of funding provided to the Superfund.

I think Mark may be set to meet with the Region on this sometime next week (and conference in Mattie and Jo). I don't know that the original request for the briefing included a request on the costs of the different scenarios. But let me know if you want us to include it and we will.

Nichole Distefano
Acting Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

Distefano, Nichole

From: Bond, Patrick (McCaskill) [Patrick_Bond@mccaskill.senate.gov]
Sent: Friday, February 28, 2014 3:42 PM
To: Sanders, LaTonya; Distefano, Nichole
Subject: Delegation Letter RE: Westlake
Attachments: 02.28.14 Westlake Letter to EPA Region 7.pdf

Attached is a letter that went into the mail today to Karl Brooks RE: the Westlake site.
Please let me know if you have any questions.

Thanks,
Pat

Congress of the United States

Washington, DC 20510

February 28, 2014

Karl Brooks
Region 7 Administrator
Environmental Protection Agency
11201 Renner Blvd.
Lenexa, KS 66219

Dear Administrator Brooks:

As you know, the radiologically impacted material at the Westlake Landfill site and the subsurface smoldering event at the Bridgeton Sanitary Landfill continue to be issues of great concern to us and our constituents in the greater St. Louis community.

We appreciate the Environmental Protection Agency's efforts in addressing the immediate concern of isolating the Westlake site from the subsurface smoldering event at the Bridgeton Landfill and your efforts to keep the community informed of your efforts. However, going forward we believe that the Agency should work with the Army Corps of Engineers and its Formerly Utilized Sites Remedial Action Program (FUSRAP) operations in the St. Louis area.

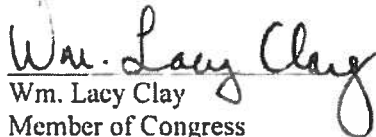
The St. Louis Corps' handling of similar radiologically impacted material at the St. Louis Downtown Site, the St. Louis Airport Site and Vicinity Properties, Latty Avenue, and the Madison Site has been a well-documented success. Given the Corps' expertise in this area, and the local community's faith in the Corps' FUSRAP mission, we request that the EPA consider contracting directly with the Corps to handle any and all remediation needed at the site. Additionally, we believe that it would also be beneficial for the Agency to contract with the Corps to conduct the ongoing review of the Record of Decision to determine the appropriate long-term remediation.

We appreciate your consideration of our request and look forward to your response.

Sincerely,



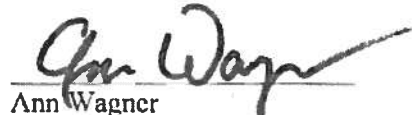
Claire McCaskill
United States Senator



Wm. Lacy Clay
Member of Congress



Roy Blunt
United States Senator



Ann Wagner
Member of Congress

Distefano, Nichole

From: Distefano, Nichole
Sent: Friday, February 28, 2014 3:46 PM
To: Bond, Patrick (McCaskill); Sanders, LaTonya
Subject: RE: Delegation Letter RE: Westlake

Got it; thanks.

Nichole Distefano
Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

From: Bond, Patrick (McCaskill) [mailto:Patrick_Bond@mccaskill.senate.gov]
Sent: Friday, February 28, 2014 3:42 PM
To: Sanders, LaTonya; Distefano, Nichole
Subject: Delegation Letter RE: Westlake

Attached is a letter that went into the mail today to Karl Brooks RE: the Westlake site.
Please let me know if you have any questions.
Thanks,
Pat

Distefano, Nichole

From: Distefano, Nichole
Sent: Tuesday, March 04, 2014 12:48 PM
To: Bond, Patrick (McCaskill)
Subject: STL Public Radio Story

In case you hadn't seen.

<http://news.stlpublicradio.org/post/confused-about-bridgeton-and-west-lake-landfills-heres-what-you-should-know>

Nichole Distefano
Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

Distefano, Nichole

From: Bond, Patrick (McCaskill) [Patrick_Bond@mccaskill.senate.gov]
Sent: Tuesday, March 04, 2014 1:17 PM
To: Distefano, Nichole
Subject: RE: STL Public Radio Story

McCaskill and Blunt call for Army Corps to work on West Lake Landfill cleanup

- St. Louis Post-Dispatch
- Blythe Bernhard
- Published 3/4/2014

Missouri's congressional delegation wants the radioactive waste at West Lake Landfill in Bridgeton moved under the control of the Army Corps of Engineers, which has worked to clean up other nuclear waste sites in downtown St. Louis and near the airport.

The Environmental Protection Agency is currently working with the landfill's owners, Republic Services, to determine how to prevent an underground fire at the adjacent Bridgeton Landfill from reaching the radioactive waste.

"Given the Corps' expertise in this area, and the local community's faith in the Corps ... we request that the EPA consider contracting directly with the Corps to handle any and all remediation needed at the site," reads the letter to EPA administrator Karl Brooks which is dated Feb. 28 and signed by Sen. Claire McCaskill, Sen. Roy Blunt, Rep. Lacy Clay and Rep. Ann Wagner.

Brooks has said the EPA is working to fix the site and no one living or working near the landfill is at risk.

"The fact is that the EPA cannot simply 'hand off' West Lake to the corps. That would require congressional action," Brooks wrote in an opinion piece for the Post-Dispatch.

From: Distefano, Nichole [<mailto:Distefano.Nichole@epa.gov>]
Sent: Tuesday, March 04, 2014 12:48 PM
To: Bond, Patrick (McCaskill)
Subject: STL Public Radio Story

In case you hadn't seen.

<http://news.stlpublicradio.org/post/confused-about-bridgeton-and-west-lake-landfills-heres-what-you-should-know>

Nichole Distefano
Deputy Associate Administrator
Office of Congressional and Intergovernmental Relations
Environmental Protection Agency
(202) 564-5200
Distefano.Nichole@epa.gov

From: Fowler, Mark (McCaskill)
To: Levine, Carolyn
Subject: RE: follow up re: West Lake Landfill site health studies
Date: Friday, June 21, 2013 4:31:05 PM

Great thanks for the help, Carolyn. Appreciate it and have a good weekend.

-Mark

From: Levine, Carolyn [mailto:Levine.Carolyn@epa.gov]
Sent: Friday, June 21, 2013 3:52 PM
To: Fowler, Mark (McCaskill)
Subject: follow up re: West Lake Landfill site health studies

Hi Mark,

I wanted to follow up on our conversation yesterday regarding community concerns near the West Lake Landfill site and potential health studies. I forwarded your inquiry to ATSDR, so they might contact you directly. If you need a contact, please let me know.

I did find out from my regional office that the Missouri Department of Health and Senior Services plans to do a chronic exposure health study this fall 2013 that would entail identifying individuals who were most likely exposed during pre-remediation years (utility bills/records are often used).

We also know that the Health Department conducted a study on the St. Louis Coldwater Creek area. Results were inconclusive so the community wants further studies. ATSDR rep can provide more details.

Below, fyi, is an EPA Region 7 press release regarding an EPA public meeting next week. Please let me know if you would like additional information.

U.S. Environmental Protection Agency, Region 7
11201 Renner Blvd, Lenexa, Kan. 66219

Iowa, Kansas, Missouri, Nebraska, and Nine Tribal Nations

NEWS MEDIA ADVISORY

EPA to Hold Public Meeting Tuesday, June 25, at Pattonville High School to Discuss Activities at West Lake Landfill Site

Contact Information: Chris Whitley, 913-551-7394 (office), 816-518-2794 (cell),
whitley.christopher@epa.gov

Environmental News

(Lenexa, Kan., June 20, 2013) - EPA Region 7 will host a public meeting on Tuesday evening, June 25, at Pattonville High School in Maryland Heights, Mo., to discuss the Agency's ongoing work at the West Lake Landfill Superfund Site, Bridgeton, Mo.

EPA Regional Administrator Karl Brooks, along with other EPA Region 7 staff and representatives from EPA's partner agencies, will attend the meeting to share information and answer questions about EPA's ongoing work at the site, including recent groundwater sampling and radiation screening activities.

The meeting will begin in the Pattonville High School Auditorium, 2497 Creve Coeur Road. After an introductory session, the meeting will move into the school's cafeteria so that attendees can participate in a public availability session with EPA and state environmental and health staffs. The event will conclude with a question-and-answer session back in the auditorium.

WHAT: Public Meeting for the West Lake Landfill Superfund Site

WHEN: 6:30 p.m. to 8:30 p.m., Tuesday, June 25, 2013

WHERE: Pattonville High School Auditorium, 2497 Creve Coeur Road, Maryland Heights, Mo. 63043

WHO: EPA Regional Administrator Karl Brooks; staff representatives from EPA Region 7, the Agency for Toxic Substances and Disease Registry (ATSDR), Missouri Department of Resources (MDNR) and Missouri Department of Health and Senior Services (MDHSS)

*Carolyn Levine
Office of Congressional Affairs
U.S. EPA
(202) 564-1859*

From: [Palmer, Downey \(Blunt\)](#)
To: [Levine, Carolyn](#)
Subject: RE: Follow Up
Date: Thursday, August 29, 2013 9:50:34 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

That is a little delayed... anything sooner or are we doing this in person.

From: Levine, Carolyn [mailto:Levine.Carolyn@epa.gov]
Sent: Wednesday, August 28, 2013 7:07 PM
To: Palmer, Downey (Blunt)
Subject: Re: Follow Up

Hi Downey,
How is noon Sept. 10?

Sent Via Blackberry

From: Palmer, Downey (Blunt) <Downey_Palmer@blunt.senate.gov>
Sent: Wednesday, August 28, 2013 1:40:53 PM
To: Levine, Carolyn
Subject: Follow Up

If on the call someone could be prepared to discuss the 2008 ROD as well I would be appreciative.

Many thanks.

Downey E. Palmer
Counsel
Senator Roy Blunt (R-MO)
260 Russell Senate Office Building
Washington, D.C. 20510
202-224-5721 (p)
202-224-8149 (f)



From: [Palmer, Downey \(Blunt\)](#)
To: [Levine, Carolyn](#)
Subject: RE: West Lake Landfill-conference call
Date: Tuesday, September 10, 2013 12:04:01 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

Yep sorry about to call in.

From: Levine, Carolyn [<mailto:Levine.Carolyn@epa.gov>]
Sent: Tuesday, September 10, 2013 12:03 PM
To: Palmer, Downey (Blunt)
Subject: RE: West Lake Landfill-conference call

Hi Downey,

Are you available now for a conference call with EPA on this?
1-866-299-3188; Access code: 9135517444

Carolyn Levine
Office of Congressional and Intergovernmental Relations
U.S. EPA
(202) 564-1859
levine.carolyn@epa.gov

From: Palmer, Downey (Blunt) [mailto:Downey_Palmer@blunt.senate.gov]
Sent: Tuesday, August 27, 2013 1:55 PM
To: Levine, Carolyn
Subject: West Lake Landfill

Carolyn,

Just left you a message on the West Lake landfill situation in St. Louis. Please give me a call. Thank you

202-224-8148

Downey E. Palmer
Counsel
Senator Roy Blunt (R-MO)
260 Russell Senate Office Building
Washington, D.C. 20510
202-224-5721 (p)
202-224-8149 (f)



